

Formal Training Unit (FTU) &  
First Main Operating Base (MOB 1)

# KC-46A Beddown



FINAL

## KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN EIS



VOLUME I

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Air Force Civil Engineer Center  
Air Mobility Command  
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<b>14. ABSTRACT</b> <p>The U.S. Air Force (USAF) prepared a Final Environmental Impact Statement (EIS). The EIS was prepared in accordance with the National Environmental Policy Act (NEPA) of 1969 (42 United States Code [U.S.C.] 4321 et seq.), as implemented by the Council on Environmental Quality (CEQ) regulations (40 Code of Federal Regulations [CFR] 15001508), and Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process (EIAP), as promulgated in 32 CFR 989. The EIS analyzed the potential environmental impacts associated with the proposal to beddown KC-46A tanker aircraft, associated infrastructure, and manpower for the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) at existing active duty bases within the continental United States. The Preferred Alternative for the FTU was Altus Air Force Base (AFB) in Oklahoma. The Preferred Alternative for the MOB 1 is McConnell AFB in Kansas. McConnell AFB was also evaluated as an alternative for the FTU scenario; and Altus, Fairchild, and Grand Forks AFBs were evaluated as alternatives for the MOB 1 scenario. Along with the No Action Alternative, these alternatives were fully evaluated in the Final EIS. The USAF issued the Record of Decision (ROD) for the KC-46A FTU and MOB 1 Beddown EIS on March 21, 2014 (Federal Register (FR), Vol. 79, No. 55, EIS No. 20140074, page, 15741, March 21, 2014). In making this decision, the information, analysis, and public comments contained in the KC-46A FTU and MOB 1 Beddown Final EIS, along with other relevant matters, were considered. The ROD was prepared in accordance with the CEQ regulations implementing NEPA at Title 40 CFR §1505.2, (Record of decision in cases requiring environmental impact statements) and 32 CFR§989, EIAP. The signed ROD states that the USAF will beddown up to eight (8) KC-46A Primary Aerospace Vehicles Authorized (PAA) under Air Education and Training Command (AETC) for the FTU at Altus Air Force Base (AFB), OK and thirty-six (36) PAA under Air Mobility Command (AMC) for the MOB 1 at McConnell AFB, KS.</p>						
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## COVER SHEET

### FINAL ENVIRONMENTAL IMPACT STATEMENT FOR THE KC-46A FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BEDDOWN

- a. **Responsible Agency:** United States Air Force (USAF)
- b. **Report Designation:** Final Environmental Impact Statement (EIS)
- c. **Inquiries:** For further information on this Final EIS, contact Ms. Jean Reynolds, AFCEC/CZN, Bldg 171, 2261 Hughes Ave, Ste 155, Lackland AFB, TX 78236-9853.
- d. **Proposed Action:** Establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). The FTU mission includes the basing of up to eight KC-46A aircraft, facilities and infrastructure and manpower to support one training squadron at one active duty Continental United States (CONUS) Air Force Base (AFB). The purpose of the FTU is to effectively train crew and support personnel to operate the KC-46A aircraft. The MOB 1 mission includes the basing of 36 KC-46A aircraft, facilities and infrastructure and manpower to support three squadrons of 12 KC-46A aircraft at one active duty CONUS AFB. The purpose of MOB 1 mission is to provide a fully capable, combat operational KC-46A aerial refueling force to accomplish aerial refueling and related missions.
- e. **Alternatives:** The Strategic Basing Process resulted in the identification of Altus AFB in Oklahoma and McConnell AFB in Kansas as alternative bases for consideration for the KC-46A FTU mission and the identification of Altus AFB, Fairchild AFB in Washington, Grand Forks AFB in North Dakota, and McConnell AFB as alternative bases for the MOB 1 mission. Although Altus AFB and McConnell AFB were identified as alternative bases for both the FTU and MOB 1 missions, no base would be selected to host both missions because of the inherent conflicts and capacity issues associated with beddown of both training and operations squadrons at a single base. The USAF's preferred alternatives for the FTU and MOB 1 missions respectively are Altus AFB and McConnell AFB. The reasonable alternatives for the MOB 1 mission are Fairchild AFB and Grand Forks AFB.
- f. **Abstract:** This EIS was prepared by the USAF in accordance with the National Environmental Policy Act of 1969 (42 United States Code [U.S.C.] 4321 et seq.), as implemented by the Council on Environmental Quality regulations (40 *Code of Federal Regulations* [CFR] 1500–1508), and Air Force Instruction (AFI) 32-7061, The Environmental Impact Analysis Process (as promulgated in 32 CFR 989). The USAF has prepared this EIS to assess the potential environmental consequences associated with the implementation of the KC-46A FTU and MOB 1 missions. The USAF selected the FTU and MOB 1 bases using operational analysis, the results of site surveys, and military judgment factors. Resources addressed in the EIS include noise, air quality, safety, soils and water, biological resources, cultural resources, land use, infrastructure, hazardous materials and waste, socioeconomics, and environmental justice and the protection of children.

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## **VOLUME II – APPENDICES**

APPENIDX A*	CORRESPONDENCE
APPENDIX B	DEFINITION OF RESOURCE AND METHODOLOGY FOR ANALYSIS
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APPENDIX D*	AIR QUALITY BACKGROUND INFORMATION AND EMISSION CALCULATIONS
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## **BACK COVER**

\*CD-ROM      Appendix A and Appendix D are included on CD-ROM on the back cover of this document.

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## ACRONYMS AND ABBREVIATIONS

ABW	Air Base Wing
ACC	Air Combat Command
ACHP	Advisory Council on Historic Preservation
ACM	asbestos-containing material
ADSL	average daily student load
AETC	Air Education and Training Command
AF	Air Force
AFB	Air Force Base
AFE	Aircrew Flight Equipment
AFH	Air Force Handbook
AFI	Air Force Instruction
AFMAN	Air Force Manual
AFOSH	Air Force Occupational and Environmental Safety, Fire Protection, and Health
AFRC	Air Force Reserve Command
AFW	Fort Worth Alliance Airport
AGE	aerospace ground equipment
AGL	above ground level
AICUZ	Air Installation Compatible Use Zone
AMA	Rick Husband Amarillo International Airport
AMC	Air Mobility Command
AME	Alternate Mission Equipment
AMTS	Air Mobility Training Squadron
AMU	Aircraft Maintenance Unit
AMW	Air Mobility Wing
ANG	Air National Guard
ANGS	Air National Guard Station
AOZ	airport overlay zone
APZ	accident potential zone
AR	air refueling
ARG	Air Refueling Group
ARW	Air Refueling Wing
AST	aboveground storage tank
AT/FP	Anti-Terrorism/Force Protection
BAM	Bird Avoidance Model
BASH	Bird/Wildlife-Aircraft Strike Hazard
bgs	below ground surface
BGEPA	Bald and Golden Eagle Protection Act
BIA	Bureau of Indian Affairs
BIA EIS	West Plains Casino and Mixed-Use Development Project EIS
BMW	Bombardment Wing
BO	boom operator
BO-PTT	Boom Operator Part Task Trainer
BOD	biological oxygen demand
BOS	Base Operating Support
BOT	Boom Operator Trainer
BRAC	Base Realignment and Closure

## ACRONYMS AND ABBREVIATIONS (Continued)

C&D	construction and demolition
C2	Command and Control
CAA	Clean Air Act
CATEX	Categorical Exclusion
CDC	child development center
CDR	Construction, Demolition & Recycle
CE	Civil Engineering
CEMP	Comprehensive Emergency Management Plan
CEQ	Council on Environmental Quality
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
<i>CFR</i>	<i>Code of Federal Regulations</i>
CH <sub>4</sub>	methane
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
CONUS	Continental United States
CSM	Clinton-Sherman Industrial Airpark
CWA	Clean Water Act
CY	calendar year
CZ	clear zone
DAHP	Department of Archaeology and Historic Preservation
dB	decibel(s)
DHS	Department of Homeland Security
DNL	day-night average sound level
DoD	U.S. Department of Defense
DODI	Department of Defense Instruction
EIAP	Environmental Impact Analysis Process
EIS	Environmental Impact Statement
EISA	Energy Independence and Security Act of 2007
EO	Executive Order
EOD	explosive ordnance disposal
ERP	Environmental Restoration Program
FAA	Federal Aviation Administration
FICUN	Federal Interagency Committee on Urban Noise
FOE	Forbes Field
FONPA	Finding of No Practicable Alternative
FRP	Facility Response Plan
FTC	Flight Training Center
FTU	Formal Training Unit
FuT	Fuselage Trainer
FY	fiscal year
GHG	greenhouse gases
GIS	geographic information system
GMV	government motor vehicle
GOCESS	Government-Operated Civil Engineer Supply Store
GP	General Plan

## ACRONYMS AND ABBREVIATIONS (Continued)

GPD	gallons per day
GPEA	General Plan Environmental Assessment
GPM	gallons per minute
GWMU	Ground Water Monitoring Unit
GWP	global warming potential
HAP	hazardous air pollutant
HAZMART	Hazardous Materials Pharmacy
HMMP	Hazardous Materials Management Plan
HRMA	Housing Requirements and Market Analysis
HVAC	heating, ventilation, and air conditioning
HWMP	Hazardous Waste Management Plan
I-	Interstate
I&I	Inflow and Infiltration
ICP	Integrated Contingency Plan
ICRMP	Integrated Cultural Resource Management Plan
ICT	Wichita Mid-Continent Airport
IDP	Installation Development Plan
IICEP	Interagency/Intergovernmental Coordination for Environmental Planning
ILS	Instrument Landing System
IMPLAN	Impact Analysis for Planning
INRMP	Integrated Natural Resource Management Plan
IOT&E	Initial Operational Test and Evaluation
IW	Intelligence Wing
JAA	Jet-A (with additives)
JLUS	Joint Land Use Study
JPRA	Joint Personnel Recovery Agency
KANG	Kansas Air National Guard
KAXS	Altus-Quartz Mountain Regional Airport
KDHE	Kansas Department of Health and Environment
KV	kilovolt(s)
KWH	kilowatt hour(s)
LBB	Lubbock Preston Smith International Airport
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
LOA	Letter of Agreement
LQG	large-quantity generator
MAJCOM	Major Command
MBTA	Migratory Bird Treaty Act
Mcf	thousand cubic feet
MGD	million gallons per day
MILCON	military construction
MMcf	million cubic feet
MOA	Memorandum of Agreement
MOB 1	First Main Operating Base
MOB 2	Second Main Operating Base
MSL	mean sea level
MTF	Maintenance Training Facility

## ACRONYMS AND ABBREVIATIONS (Continued)

MWH	megawatt hours
NAAQS	National Ambient Air Quality Standards
NAVAIDS	Airfield Navigational Aid System
NDAAQS	North Dakota Ambient Air Quality Standards
NDDH	North Dakota Department of Health
NDNHP	North Dakota Natural Heritage Program
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIOSH	National Institute for Occupational Safety and Health
NIPTS	noise-induced permanent threshold shift
NO <sub>2</sub>	nitrogen dioxide
NOA	notice of availability
NOI	notice of intent
NO <sub>x</sub>	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
NVG	night vision goggles
NVIS	Night Vision Imaging System
NWR	National Wildlife Refuge
O&M	operations and maintenance
O <sub>3</sub>	ozone
ODEQ	Oklahoma Department of Environmental Quality
ODS	ozone depleting substance
OSHA	Occupational Safety and Health Administration
OWS	oil-water separator
P2	Pollution Prevention
PAA	Primary Aerospace Vehicles Authorized
PCB	polychlorinated biphenyl
PDA	Potential Development Alternative
PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
POV	privately owned vehicle
ppm	parts per million
P-PTT	Pilot Part Task Trainer
PSD	Prevention of Significant Deterioration
PVC	polyvinyl chloride
RAPCON	Radar Approach Control
ROD	Record of Decision
ROI	region of influence
RPA	remotely piloted aircraft
RPWRF	Riverside Park and Water Reclamation Facility
SAC	Strategic Air Command
SecAF	Secretary of the Air Force
SEL	sound exposure level
SERE	Survival, Evasion, Resistance, and Escape
SHPO	State Historic Preservation Office
SIP	State Implementation Plan

## ACRONYMS AND ABBREVIATIONS (Continued)

SO <sub>2</sub>	sulfur dioxide
SO <sub>x</sub>	sulfur oxides
SPCC	Spill Prevention, Control, and Countermeasures
SQG	small-quantity generator
Squad Ops	Squadron Operations
SRCAA	Spokane Regional Clean Air Agency
STA	Sikorsky Training Academy
STRACNET	Strategic Rail Corridor Network
SUA	Special Use Airspace
SWPPP	Storm Water Pollution Prevention Plan
TACAN	Tactical Air Navigation
TCE	trichloroethylene
TFI	Total Force Integration
TSCA	Toxic Substances Control Act
TTS	Temporary Threshold Shift
U.S.C.	<i>United States Code</i>
UFC	Unified Facilities Criteria
USACE	U.S. Army Corps of Engineers
USAF	U.S. Air Force
USEIA	U.S. Energy Information Administration
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
UST	underground storage tank
VOC	volatile organic compound
WAAQS	Washington Ambient Air Quality Standards
WANG	Washington Air National Guard
WIC	Weapons Instructor Course
WST	Weapon System Trainer
WWTP	Wastewater Treatment Plant

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# CHAPTER 1

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## PURPOSE AND NEED FOR KC-46A FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BEDDOWN





## **1.0 PURPOSE AND NEED FOR KC-46A FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BEDDOWN**

The United States (U.S.) Congress authorized and appropriated funds supporting the U.S. Air Force's (USAF's) selection of the KC-46A as the newest aerial refueling aircraft to replace a portion of the aging fleet of KC-135 Stratotankers. Beginning in 2012, the deployment of new USAF aircraft and missions must follow Air Force Instruction (AFI) 10-503, "Strategic Basing." Per this AFI, the USAF must perform an enterprise-wide evaluation of Air Force Bases (AFBs) that could be considered as basing locations for the KC-46A.

This Final Environmental Impact Statement (EIS) has been prepared to provide the decision maker and the public the information required to understand the future potential impacts of the decisions that may be made regarding beddown of the Formal Training Unit (FTU) and the First Main Operating Base (MOB 1) missions for the KC-46A.

This Final EIS analyzes USAF proposals to beddown the FTU and the MOB 1 missions for the KC-46A at active-duty AFBs in the continental United States (CONUS). The FTU action would include the basing of up to eight Primary Aerospace Vehicles Authorized (PAA) under Air Education and Training Command (AETC), and the MOB 1 action would include the basing of 36 PAA under Air Mobility Command (AMC). The first four KC-46A aircraft will arrive at the MOB 1 base in 2016 to undergo Initial Operational Test and Evaluation (IOT&E). During IOT&E, which will only occur at the MOB 1, aircraft will begin arriving at both of the bases selected to host the FTU and MOB 1 missions, with up to eight delivered by 2021 for the FTU mission and 36 delivered by 2019 for the MOB 1 mission.

The USAF used the Strategic Basing Process outlined in AFI 10-503 to identify the alternative bases indicated below. Although individual bases may be considered for both the FTU and MOB 1 missions, no base would be selected to host both missions.

- FTU Scenario Alternative Bases
  - Altus AFB, Oklahoma
  - McConnell AFB, Kansas
- MOB 1 Scenario Alternative Bases
  - Altus AFB, Oklahoma
  - Fairchild AFB, Washington
  - Grand Forks AFB, North Dakota
  - McConnell AFB, Kansas



*The KC-46A will provide decades of mission support from the First Main Operating Base (MOB 1) and a Formal Training Unit (FTU).*

Basing actions for the KC-46A mission would follow the 2008 Secretary of Defense Total Force Integration (TFI) policy concept. This policy was enacted into law through the passage of the 2008 National Defense Authorization Act. TFI associations pair two USAF component units (host and associate) together to operate as one. The host unit is assigned responsibility of the physical resources for accomplishing a mission (aircraft, equipment, facilities) and the associate unit shares those resources. Currently, there are three types of TFI associations: classic, active, and Air Reserve Component.

The KC-46A FTU and MOB 1 missions will utilize the classic association of crews. Per AFI 90-1001, "Responsibilities for Total Force Integration," classic associations pair active-duty host units with a reserve component associate unit to improve operational synergies and add capacity during surge operations at a reduced cost.

For over 50 years, the KC-135 served as the aerial refueling backbone to project global reach and combat power. The new KC-46A will provide updated technology designed to enhance operations and increase mission effectiveness to support USAF, Navy, Marine Corps, and allies who rely on tanker range and flexibility to strengthen the coalition mission.

AMC is the lead Major Command (MAJCOM) responsible for maintaining the air mobility mission, including command and control (C2) of airlift and aerial refueling. AMC will operate the MOB 1 mission with fully trained combat aircrews providing aerial refueling and mission support for regional conflicts, conventional global strike, and nuclear deterrence operations.

Integration of this new aircraft into the USAF inventory requires trained aircrews (pilots, copilots, boom operators [BOs], and support personnel). AETC is the MAJCOM responsible for training KC-46A pilots, copilots, BOs, and support personnel at the FTU base. In addition, personnel will be trained to support the new C2 core function that will have the capability to provide connectivity among tactical network partners.

The USAF will accommodate growth in understanding the KC-46A program by incorporating an adaptive management approach. Training and operational understanding of the KC-46A weapons system will evolve as the aircraft are integrated into the USAF inventory. As program understanding and requirements mature, adaptive management will allow for continuous improvement in the management effectiveness and reduction of environmental impacts.

The National Guard Bureau is preparing a separate EIS that will support an independent decision to beddown 12 KC-46A aircraft at a Second Main Operating Base (MOB 2), to be operated by the Air National Guard (ANG). The locations being considered for MOB 2 include Forbes Field (FOE), Kansas; Joint Base McGuire-Dix-Lakehurst, New Jersey; Pease Air National Guard Station, New Hampshire; Pittsburgh Airport, Pennsylvania; and Rickenbacker Air National Guard Base, Ohio. This action is separate and independent from the FTU and MOB 1 decisions that will result from this Final EIS. Following the first two beddown actions, the USAF will plan additional beddown actions for the remaining KC-46A aircraft.

## **1.1 PURPOSE OF THE FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BASING**

The proposed actions to establish the FTU and MOB 1 are intended to (1) effectively train required crew and support personnel at the FTU and (2) provide a fully capable, combat operational KC-46A aerial refueling force at the MOB 1 to accomplish aerial refueling and related missions.

The mission-ready KC-46A squadrons will allow immediate and effective employment in exercises, peace-keeping operations, contingencies, and combat. Bedding down and operating the KC-46A will allow the USAF to maintain combat capability and mission readiness as U.S. military resources become increasingly committed to missions throughout the world.

## **1.2 NEED FOR THE FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BASING**

The KC-46A FTU and MOB 1 beddowns are needed to support the recapitalization of the USAF's aging refueling aircraft fleet. The USAF needs bases to accomplish the required training and to field a fully operational force. FTU and MOB 1 bases are needed to achieve a high state of operational mission readiness. The effective training and qualification of crewmembers and support personnel at the FTU will transition initially to mission-ready MOB 1 KC-46A squadrons.

The basing locations will require facilities, infrastructure, and airspace where KC-46A aircraft can be located with the capability for crews and aircraft to perform all the activities and training necessary to maintain a robust aerial refueling capability for the USAF and other U.S. Department of Defense (DoD) branches as legacy KC-135 tankers are withdrawn from the inventory.

### 1.3 BACKGROUND FOR MEETING THE PURPOSE AND NEED

In April 2006, the USAF completed an Analysis of Alternatives to determine the most appropriate strategy to recapitalize the existing KC-135 aircraft fleet. Based on this analysis, the USAF concluded that a commercial derivative replacement tanker would result in the best value. Although Section 1.4.2 details the technological improvements of the KC-46A, the following points are examples of capabilities that are currently lacking or are very limited with the existing KC-135 fleet.

- **Receiver Capable.** The ability to receive fuel from other tanker aircraft is considered a force multiplier. Currently, this capability is only available on a small number of KC-135 aircraft. This lack of capability limits persistence over the battlefield and results in inefficient use of aerial refueling assets
- **Night Vision Imaging System (NVIS).** The fleet lacks a standard NVIS for tanker cockpits and BOs. External aircraft lighting is currently not NVIS-compatible. The lack of this capability degrades effectiveness for special operations support and limits the use of these aircraft for covert operations
- **Multi-point Refueling.** Only a small number of KC-135 aircraft are equipped for simultaneous multi-point refueling. The lack of this capability severely limits the aircraft's functionality to support multiple simultaneous refueling operations, as well as boom and drogue refueling on the same mission
- **Command and Control (C2) Network.** Lacks connectivity to C2 assets and aircraft have no secure tactical datalink and limited connectivity to other combat support and mobility aircraft
- **Defensive Protection.** Not normally equipped with aircraft defensive systems, which limits aircraft from operating in anything other than a low-threat environment

Congressional authority funded a total aircraft inventory of up to 179 KC-46A aircraft by 2028 to correct deficiencies, update the fleet, enhance operations, and increase mission effectiveness. Most of the total aircraft inventory will be assigned to combat units but would be operated by units assigned to AMC, U.S. Air Force in Europe, Pacific Air Forces, ANG, and Air Force Reserve Command (AFRC).

### 1.4 AIRCRAFT CHARACTERISTICS

This section compares the aircraft characteristics of the KC-46A and the existing KC-135. Some key specifications of the KC-135 and the KC-46A are compared in Table 1-1.

**Table 1-1. Aircraft Comparison**

Specification	KC-135	KC-46A
Length	136 feet, 3 inches	165 feet, 6 inches
Height	41 feet, 8 inches	52 feet, 10 inches
Wingspan	130 feet, 10 inches	156 feet, 1 inch
Power Plant	4 F108-CF-100	2 Pratt Whitney 4062

**Table 1-1. Aircraft Comparison (Continued)**

Specification	KC-135	KC-46A
Takeoff Thrust	21,634 pounds per engine	62,000 pounds per engine
Speed	530 miles per hour (mph) at 30,000 feet	530 mph at 30,000 feet
Ceiling	50,000 feet	40,100 feet
Maximum Takeoff Weight	322,500 pounds	415,000 pounds
Maximum Fuel Capacity	200,000 pounds	212,000 pounds
Pallets/Palletized Cargo Weight Capacity	6/36,000 pounds	18/65,000 pounds
Crew	3 crewmembers	3 crewmembers
Receiver Fuel Transfer	Very limited	Yes
Fuel Jettison	Yes	Yes
NVIS	No	Yes
Multi-point Refueling	Very limited	Yes
C2 Network	No	Yes
Defensive Protection	Very limited	Yes
Aeromedical Evacuation	Limited	Yes

#### 1.4.1 Aircraft Characteristics of the KC-135

The KC-135 Stratotanker was developed in 1954 as the USAF's first jet-powered refueling tanker to replace the KC-97 Stratotanker and is derived from a commercial Boeing 367-80 commercial passenger plane. Between 1956 and 1966, 820 KC-135 aircraft of many different variations were built. Over the last 50 years, the KC-135 fleet has undergone substantial modifications to add capability. The KC-135 was originally developed to refuel strategic bombers. It was used in the Vietnam War and in all conflicts up to and including Operation Enduring Freedom in Afghanistan. For this Final EIS, all KC-135 models, including the current R model, are referred to as KC-135. Originally all KC-135s were equipped with four Pratt & Whitney J-57-P-59W turbojet engines capable of producing approximately 13,000 pounds of thrust each. The current R models were upgraded to use the CFM56-2B1 (Military designation F108-CF-100) turbofan engines, which are capable of generating approximately 21,634 pounds of thrust per engine. The KC-135 has a maximum takeoff weight of more than 322,500 pounds and the ability to off-load in excess of 150,000 pounds of fuel. In addition, the KC-135 is capable of transporting up to 36,000 pounds of palletized cargo and/or ambulatory patients during aeromedical evacuations. A cargo deck above the refueling system can hold a mixed load of passengers and cargo depending on the fuel storage configuration. The KC-135 pumps fuel through the flying boom, but some aircraft have been specially fitted with wing pods to allow a multi-point aerial refueling drogue system. As noted previously, the aircraft is limited by not possessing the capability for receiver fuel transfer, NVIS, defense protection, and C2 capabilities.



#### 1.4.2 Aircraft Characteristics of the KC-46A

The KC-46A is derived from a commercial Boeing 767-200ER series aircraft and will be powered by two Pratt & Whitney 4062 engines (thrust reversers removed). Each engine will have the capability to provide approximately 62,000 pounds of thrust. The aircraft will be Federal Aviation Administration (FAA)-certified for worldwide operations. The KC-46A configuration adds the military equipment (e.g., aerial refueling, defensive systems, situational

awareness) and will receive a FAA Supplemental Type Certificate as well as a USAF Military Type Certificate. It is required to meet the FAA Part 36 Stage 4 (most restrictive commercial aircraft noise level standard) and the International Congress of Aeronautical Organizations, Committee of Environmental Protection (CAEP)/6 air contaminant emission limits. Three crewmembers, (pilot, copilot, and BO) will operate the aircraft with permanent seating for an additional 12 aircrew members. With new technology and a maximum fuel capacity expected to be 212,000 pounds, the KC-46A is capable of accomplishing all current AMC refueling missions.

The KC-46A will be able to refuel any certified fixed-wing receiver-capable aircraft on any mission both day and night. The aircraft will be equipped with a modernized KC-10 refueling boom integrated with proven fly-by-wire control system and will have the ability to deliver fuel through a centerline hose and drogue system, which adds additional mission capability independent of the boom system.



This aircraft will be capable of accomplishing multi-role missions. By trading fuel for cargo, it will be able to carry up to 18 standard cargo pallets with a total palletized cargo payload of up to 65,000 pounds. With a far greater cargo area contour than the KC-135, KC-46A centerline pallet positions 1 through 8 can be built to carry full height (96-inch-high) cargo without the need for contouring, compared to KC-135 pallets, which are typically restricted to 65-inch-high cargo and must be contoured on the right-hand side starting at 50 inches off the top pallet surface. In normal operations, the KC-46A can be configured to carry 58 passengers and will be capable of providing urgent Aeromedical Evacuation, transporting up to 50 medical patients (24 litters/26 ambulatory).

Additional features include a flush-mounted air refueling receptacle, wing air refueling pods capability, boom air refueling camera and computer control systems, defensive and communication systems, NVIS/covert lighting, and military radio/navigation receivers. The BO will control the refueling systems from the crew compartment via the Air Refueling Operating Station. A series of cameras mounted on the tanker's fuselage provide a 185-degree field of view under day and night lighting conditions. Imaging may be captured in three-dimensional or two-dimensional high-definition video. Fuel is automatically transferred within the aircraft to maintain center of gravity in all axes. The flow of fuel in, out, and within the aircraft can be manually or automatically controlled by the aircraft and can be manually controlled by the aircrew via control display units at the appropriate duty station.

In addition to fuel and cargo transport, each KC-46A aircraft will possess a secure airborne communications capability, which will provide beyond-the-line-of-sight messaging and line-of-sight tactical datalink multi-modal communications via secure networks. Hosting a suite of network-centric communications equipment, the KC-46A will function with most current C2 systems. The KC-46A will also support the C2 core function as a communications "gateway" when equipped with a roll-on gateway system to provide connectivity between tactical network partners in theater.

This aircraft will have self-defense and protection (both active and passive) capabilities and the necessary operational environment awareness to mitigate threats, but will not be operated in areas of high threats without requesting suppression of enemy air defenses and air support.

This aircraft is capable of ferrying fuel into semi-austere airfields. By following Forward Area Refueling Point procedures, the aircraft can off-load fuel into fuel pits, bladders, trucks, or other

aircraft, with or without the engines running, without the need for special equipment. The aircraft will be able to operate at certain night vision goggle (NVG) and/or defensive system-required airfields with a minimum of 7,000 feet of paved runway available for takeoff/landing.

The aircraft will be capable of operating in day-night and adverse weather conditions over vast distances to enable deployment, employment, sustainment, and redeployment of U.S., joint, allied, and coalition forces.

## **1.5 PUBLIC AND AGENCY INVOLVEMENT**

The primary purpose of the Final EIS is to describe the actions being proposed by the USAF, along with the potential consequences associated with implementation of those actions. Potential impacts associated with implementation of the KC-46A scenarios were evaluated during the planning stages of the project. These potential impacts are presented in this Final EIS. The USAF has evaluated all reasonable alternatives to ensure that informed decisions are made after review and consideration of the potential environmental consequences. The Environmental Impact Analysis Process (EIAP) (32 *Code of Federal Regulations* [CFR] 989) is the process by which the USAF implements the National Environmental Policy Act (NEPA) and the Council on Environmental Quality (CEQ) NEPA implementing regulations. This Final EIS documents the detailed study of these potential environmental consequences. Compliance with the NEPA process involves several steps to ensure public and agency involvement.

### **1.5.1 Scoping Process**

The public scoping period for the KC-46A FTU and MOB 1 EIS began on 26 March 2013 with publication of the notice of intent in the *Federal Register*. During the following weeks, notification letters were mailed to Federal, state, and local agencies; elected officials; federally recognized tribes (tribes)<sup>1</sup>; nongovernmental organizations; and interested individuals as a part of Interagency/Intergovernmental Coordination for Environmental Planning (IICEP).

IICEP is a federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions. Through the IICEP process, concerned Federal, state, and local agencies are notified and allowed sufficient time to evaluate potential environmental impacts of a proposed action. The USAF determined, through informal consultation with the U.S. Fish and Wildlife Service (USFWS) and state wildlife agencies, that there are no Federal or state threatened or endangered species in the regions of influence (ROIs) of the KC-46A scenarios; therefore, no further consultation was required.

Appendix A, contained in Volume II of this Final EIS, provides sample notification letters, the notification mailing lists, and the comments and concerns received by the USAF during the public scoping period. Newspaper advertisements announcing the intent to prepare a Draft EIS and hold public scoping meetings were published in 10 different local daily and weekly newspapers. These advertisements were published in the weeks preceding each of the scheduled public scoping meetings.

Four public scoping meetings were held between 9 and 18 April 2013 in communities near the four alternative bases (see Table 1-2). The meetings were held in an open house format where citizens could review display boards about the proposed missions and speak individually with USAF personnel. During these meetings, USAF personnel presented information on the

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<sup>1</sup> Per Department of Defense Instruction (DoDI) 4710.02, *DoD Interactions with Federally-Recognized Tribes*, “tribe” refers to a federally recognized Indian or Alaska Native tribe, band, nation, pueblo, village, or community that the Secretary of the Interior acknowledges (DoDI 4710.02, Section 3.5).

proposed action through the use of display boards and fact sheets and answered questions posed by those in attendance.

**Table 1-2. KC-46A FTU and MOB 1 Beddown Public Scoping Meetings**

Date	Time	Location
9 April 2013	5:00 - 8:00 P.M.	Southwest Technology Center 711 West Tamarack Road; Altus, OK 735213
11 April 2013	5:00 - 8:00 P.M.	Eugene M. Hughes Metropolitan Complex Room 180 5015 E. 29th Street; North Wichita, KS 67260
16 April 2013	5:00 - 8:00 P.M.	The Lincoln Center, Lincoln Ballroom 1316 North Lincoln Street; Spokane, WA 99201
18 April 2013	5:00 - 8:00 P.M.	Grand Forks Ramada Inn 1205 North 43rd Street; Grand Forks, ND 58203

The scoping meetings were attended by 578 people, which included residents, elected officials, local business leaders, military affairs committee members, congressional staffers, base employees, and others. The scoping period closed on 17 May 2013, and approximately 200 comments were received. The majority of the comments were supportive, with only a few requesting certain resource area information to be presented in the Draft EIS.

During scoping, the public and agencies were primarily interested in understanding the operational and economic factors associated with bringing the KC-46A to their base. Some of the comments were related to the proposed action and alternatives and concerns about the environmental consequences, and some expressed support for bringing the KC-46A mission to the local base. Other than the expressions of support, the key issues identified during initial scoping are summarized in Table 1-3.

**Table 1-3. Public and Agency Scoping – Summary of Key Issues for KC-46A FTU and MOB 1 Beddown**

Issue/Concern/Comment	Base	Concern Expressed by		
		Agency	Public	Tribe
Concern related to impact on National Park Service units	All	X		
Concern related to groundwater plume from USAF operations	Altus		X	
Concern related to the West Pattern and how flying impacts Quartz Mountain Regional Airport	Altus		X	
Comment stating that actions should be taken to prevent surface-water and groundwater contamination	Altus	X		
Recommendation that the USAF provide cultural resource surveys for review	Altus			X
Concern related to undesirable noise from Spokane Airport	Fairchild		X	
Concern related to job impacts on the Spokane area	Fairchild		X	
Concern related to air quality	Fairchild	X		
Concern that noise that could disrupt fasting and tribal prayers	Grand Forks			X
Appeal for the protection of wetlands, water resources from sediment and spills	Grand Forks	X		
Concern about noise effects on a state park	Grand Forks	X		
Suggestion that base traffic should use the gate accessed from U.S. Highway 2 interchange	Grand Forks	X		
Contaminated sites near the base	McConnell	X		
Suggestion that EIS should detail infrastructure necessary and consider Installation Restoration Program sites and the institutional control plan that covers 21 sites	McConnell	X		

**Table 1-3. Public and Agency Scoping – Summary of Key Issues for KC-46A FTU and MOB 1 Beddown (Continued)**

Issue/Concern/Comment	Base	Concern Expressed by		
		Agency	Public	Tribe
Request for project plans to determine project-specific recommendations	McConnell	X		
Request for cultural resource surveys and National Historic Preservation Act (NHPA) compliance	McConnell			X
Concurrence that Building 1129 may warrant NHPA Section 110 consideration	McConnell	X		

### 1.5.2 Public Review

The public review period for the KC-46A FTU and MOB 1 Draft EIS was originally planned to begin on 11 October 2013 with publication of the notice of availability (NOA) in the *Federal Register*. Copies of the Draft EIS and associated cover sheets were mailed to Federal, state, and local agencies; elected officials; local libraries; tribes; nongovernmental organizations; and interested individuals. However, because of the government-wide shutdown that occurred from 1 October through 16 October, publication of the NOA in the *Federal Register* did not occur until 25 October 2013. The NOA for the Draft EIS was also published in ten different local newspapers in the communities near the four bases and near the proposed auxiliary airfields (for the FTU mission). Press releases, public service announcements, and postcards were also used to provide notification of availability of the Draft EIS and the dates, times, and locations of the public hearings.

The Draft EIS document was posted on a publicly available website at <http://www.KC-46A-Beddown.com>. The public review period started on 25 October and ended on 9 December 2013. All comments received during the comment period were considered during preparation of the Final EIS. Comments received are contained in Volume II, Appendix A, Section A.7.3. The USAF only developed responses for substantive comments (Table 6-3).

Generally, substantive comments are regarded as those comments that challenge the analysis, methodologies, or information in the Draft EIS as being factually inaccurate or analytically inadequate; that identify impacts not analyzed or develop and evaluate reasonable alternatives or feasible mitigations not considered by the agency; or that offer specific information that may have a bearing on the decision, such as differences in interpretations of significance or of scientific or technical conclusions. Non-substantive comments, which do not require an agency response, are generally considered those comments that express a conclusion, an opinion, or a vote for or against the proposal itself, or some aspect of it; that state a position for or against a particular alternative; or that otherwise state a personal preference or opinion.

Comments were received through the mail and the website, and were submitted in writing or presented orally at the public hearings. Some of the comments were considered substantive in that they challenged the proposed action and alternatives or expressed concerns about the environmental consequences. Other comments were non-substantive in that they expressed an opinion about the proposal or expressed support for or against bringing the KC-46A mission to the local base.

## 1.6 TRIBAL CONSULTATION

In an ongoing effort to identify cultural resources or other issues of interest to tribes and as part of the NEPA scoping process, notification letters were submitted to tribes. These letters (see Volume II, Appendix A, Section A.3) were transmitted with a focus on inviting tribes to participate in the NEPA scoping process. Response summaries are reflected in Table 1-3 (see

Volume II, Appendix A, Section A.3, for complete responses). Refer to Table A-1 in Volume II, Appendix A, Section A.3, for a list of the tribes consulted. Also, following the NEPA notification, tribes were contacted separately to initiate National Historic Preservation Act (NHPA) Section 106 consultation (see Volume II, Appendix A, Section A.4, for complete responses). Explanation of the Section 106 consultation is provided for each alternative base in the respective Chapter 3 Cultural Resources section. Following standard USAF practice, consultation was initiated by base commanders who represent key leadership points of contacts for formal government-to-government correspondence. Additional direct communication efforts (phone calls and emails) occurred for tribes that did not respond to USAF mailings. All communications with tribes were completed in accordance with Executive Order (EO) 13175, “Consultation and Coordination with Indian Tribal Governments”, Department of Defense Instruction (DoDI) 4710.02, and 36 CFR 800, “Protection of Historic Properties”.

To support this EIS, the USAF consulted on a government-to-government basis with the respective tribes attaching historical, cultural, and/or religious significance to lands or sites in the project areas, including but not limited to areas around auxiliary airfields where FTU aircrews would operate.

## **1.7 ORGANIZATION OF THE ENVIRONMENTAL IMPACT STATEMENT**

This Final EIS is designed to analyze the potential environmental impacts associated with the FTU and MOB 1 basing of KC-46A aircraft. The basing will include facilities, personnel, and flight operations at selected bases. The alternative bases are identified in Chapter 2.

Chapter 1 provides information on the purpose and need for the proposed FTU and MOB 1 KC-46A beddown. This section includes an overview of the KC-46A capabilities and explains that the FTU and MOB 1 bases would need to provide facilities, infrastructure, and personnel to assist with KC-46A operations and training. In addition, Chapter 1 addresses public and agency involvement and tribal consultation.

Chapter 2 describes the process for selecting bases and explains the USAF proposed action, the Preferred Alternative for each mission, the reasonable alternatives, and the No Action Alternative. Because the proposed aircraft is the same for the FTU and the MOB 1, this chapter presents general project features applicable to any of the four bases. This chapter also includes a more detailed explanation of requirements for the FTU and the MOB 1 beddowns in terms of base-specific personnel, facility, and operational elements, and lastly describes the project requirements for each base alternative. This chapter also includes a comparison of the potential environmental consequences across the alternatives, a discussion on mitigation measures, and a discussion on unavoidable impacts.

Chapter 3 is organized by each of the four bases and presents the environmental baseline or affected environment at each base selected as alternatives for the FTU or MOB 1 mission.

Chapter 4, also organized by base, presents the analysis of potential environmental impacts associated with implementation of the FTU or MOB 1 mission identified for that base. The analysis in this chapter results from overlaying the mission-specific requirements from Chapter 2 upon the affected environment from Chapter 3 to present the context and intensity of environmental consequences by resource area.

Chapter 5 identifies past, present, and reasonably foreseeable regional projects and describes potential cumulative effects of the proposed beddown in combination with other regional actions at each base. Chapter 5 also identifies irreversible or irretrievable commitments of resources.

Chapter 6 provides a summary of public involvement that has occurred after the release of the Draft EIS. This chapter includes information regarding the public hearings and the USAF responses to substantive comments.

References, contacts made during the EIS development, and a list of the preparers of this EIS, including a summary of their educational accomplishments, are included following Chapter 6.

Volume II contains Appendices A through E, each of which provide supplementary information briefly described below.

Appendix A provides notification letters, notification mailing lists, scoping and public hearing comments and concerns received by the USAF, and correspondence with tribes.

Appendix B describes the environmental resources being considered in this Final EIS, including the applicable regulations, permits, and appropriate agencies involved in the determination of environmental consequences. This appendix also describes the methodology followed for each environmental resource area to evaluate the environmental consequences of basing KC-46A aircraft. The methodology for impact analysis for each resource area, as described in Appendix B, is consistent for each resource area at each of the four bases.

Appendix C includes effects on some specific resources that may not be affected by regularly scheduled KC-46A training operations. Discussion of impacts on a wide variety of resource types provides additional perspective and context for those resources impacted by regular operations. This appendix provides a general noise primer to educate the reader on what constitutes noise, how it is measured, and the studies that were used in support of how and why noise is modeled.

Appendix D includes air quality background information for each of the four bases under consideration for the KC-46A FTU and MOB 1 scenarios. This background information includes regional climate information, along with the spreadsheets used to complete the air quality analysis contained in Chapter 4.

Appendix E summarizes the buildings that would be affected by the KC-46A FTU and MOB 1 beddown-related demolition, renovation, or alteration; their years of construction; and their potential to contain toxic substances (asbestos-containing material [ACM], lead-based paint [LBP], and polychlorinated biphenyls [PCBs]).

# CHAPTER 2

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## DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES





## 2.0 DESCRIPTION OF THE PROPOSED ACTION AND ALTERNATIVES

### 2.1 OVERVIEW

This section presents a description of the activities and implementing actions associated with the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) missions. The FTU mission involves basing of up to eight Primary Aerospace Vehicles Authorized (PAA) KC-46As in one training squadron to establish the KC-46A FTU at an active-duty continental United States (CONUS) Air Force Base (AFB). The MOB 1 mission involves the basing of 36 KC-46A aircraft in three squadrons of 12 PAA to establish the MOB 1 at an active-duty CONUS AFB. For identified alternatives, this section provides a detailed description of the activities and implementing actions associated with establishing both the KC-46A FTU and MOB 1.

Each squadron requires infrastructure, facilities, airfield operations, training activities, personnel, and airspace to support missions. This section identifies the operational requirements that would be involved at any of the alternative bases.

Table 2-1 provides an overview of key elements associated with the KC-46A FTU or MOB 1 beddown with the potential to affect environmental resources at the base or under the training airspace.

**Table 2-1. Overview of KC-46A FTU and MOB 1 Beddown Proposal**

The proposal for the KC-46A FTU or MOB 1 beddown involves implementing several related elements at a selected base.

***Elements Affecting the Base***

- ✓ For the FTU, the beddown of up to eight KC-46A aircraft in one squadron in accordance with the aircraft delivery schedule
- ✓ For MOB 1, the beddown of 36 KC-46A aircraft in three squadrons in accordance with the aircraft delivery schedule
- ✓ Depending on mission, conduct sorties at each base for pilot, copilot, and boom operator (BO) training/certification, aerial refueling operations, and global reach missions
- ✓ Renovate, construct, and manage facilities and infrastructure necessary to support the mission
- ✓ Implement personnel changes (increases or decreases) at the base to conform to mission requirements

Depending on the base and the mission proposed for that base, the proposed action would either add to current missions or replace the current KC-135 mission. Implementation of the proposed action would occur in two stages: a beddown stage and an operational stage. The beddown stage involves construction/retrofit of required facilities, infrastructure, and prepared surfaces, which includes renovation, alteration, and demolition. The beddown stage also includes preparing support facilities for new personnel and students to support the mission. The operational stage involves conducting day-to-day activities (operational missions, maintenance, etc.) of squadrons at the base, including base flight operations, training in the regional airspace, and use of auxiliary airfields.

Section 2.4 provides a detailed description of each of the alternative bases under consideration. The description of each alternative carried forward as a reasonable alternative contains specifics about how the beddown and mission would be implemented at the alternative base and within the regional airspace. In conformance with the Council on Environmental Quality (CEQ) regulations (40 *Code of Federal Regulations* [CFR] 1502.14[d]), this section also describes a No Action Alternative, which consists of not bedding down a KC-46A mission.

## **2.2 NARROWING PROCESS FOR ALTERNATIVE BASES**

The narrowing process used to identify alternatives for the KC-46A FTU and MOB 1 basing locations is described below. The process applied operational and other criteria to identify reasonable alternatives for the beddown of KC-46A FTU and MOB 1 missions.

### **2.2.1 Alternative Identification Process Methodology**

This section describes the U.S. Air Force (USAF) Strategic Basing Process and then describes the application of the Strategic Basing Process to identify KC-46A FTU and MOB 1 scenario basing locations included in this Final Environmental Impact Statement (EIS).

In general, the USAF uses the Strategic Basing Process outlined in Air Force Instruction (AFI) 10-503 to select locations to beddown USAF missions. The process begins by identifying all the bases that could reasonably support a given mission. This enterprise of bases is then evaluated using objective criteria to screen the top candidate bases. Major Command (MAJCOM)-led site surveys are then conducted at each candidate location to determine if the base could reasonably support the mission in question. The Strategic Basing Executive Steering Group oversees the process and reports findings directly to the Secretary of the Air Force (SecAF) and Chief of Staff of the Air Force. This process was mandated by the SecAF to ensure basing decisions were made using a deliberate, repeatable, and standardized process.

In September 2011, Air Mobility Command (AMC) presented the Lead Command Intent for the KC-46A to the SecAF. This Lead Command Intent described the proposed basing action tenets, force structure mix, basing timelines, and the critical information that would be used to shape and inform decisions made throughout the USAF Strategic Basing Process. The following planning conventions were derived from the Lead Command Intent:

1. Identify the number of KC-46A aircraft scheduled to be delivered between 2014 and 2018. This time period corresponded to the U.S. Department of Defense (DoD) Future Years Defense Program, which is the program and financial plan approved by the Secretary of Defense, and provides a basis for USAF planning. Planning beyond this time period is speculative due to the indeterminacy of availability of resources.
2. Identify the number of KC-46A aircraft to be allocated to training and to operations based on then-current national strategic considerations.
3. Determine the number of bases minimally needed to support receipt of these aircraft for training and operations by dividing the amount allocated to training and to operations by the number of squadrons based on two different squadron configurations: one squadron of up to eight PAA for the FTU and three squadrons of 12 PAA each (36 PAA total) for MOB 1 operations. PAA are those aircraft assigned to meet the primary aircraft authorization and reflect the number of aircraft flown by a unit in performance of its mission.
4. Recognize additional factors of Plans and Guidance and Global Positioning, which include strategic considerations but do not provide meaningful distinction among bases for USAF training within the United States and its territories. An additional Logistics Supportability factor equates to Boeing's support capacity set forth in its contract with the USAF. This factor does not distinguish among bases and is not included in the identification of reasonable FTU and MOB 1 beddown alternatives.

Consideration of the planning conventions above led to an initial screening of all active-duty AFBs against the following standards for the FTU and MOB 1 missions: (1) a runway of at least 7,000 feet in length, (2) the presence of an active-duty wing on the base, and (3) a location in the CONUS. The initial screening yielded a defined enterprise of 54 bases to be evaluated for the FTU and MOB 1 beddowns.

In 2012, AMC presented objective screening criteria to the SecAF. The approved screening criteria were used to screen the enterprise of 54 bases to identify those bases' capacity to successfully support the FTU and MOB 1 missions. The objective criteria included mission, capacity, environmental considerations, and cost and are described in more detail below:

- Mission criteria: For the FTU, proximity to aircraft available to support aerial refueling training, capacity for training and student throughput, existing or space for the required aircrew training system facility and a Fuselage Trainer (FuT) Facility, airfield and airspace availability, fuel system capabilities, and the potential to establish an association to the FTU mission criteria. For the MOB 1, proximity to refueling receiver demand, airfield and airspace availability, fuel system capabilities, and the potential to establish an association to the MOB 1 mission criteria
- Capacity criteria: For the FTU, basic mission facility capacity or space; Base Operating Support (BOS) facilities; base runway length and bearing capacity; available ramp space; squadron operations (Squad Ops) facilities with Aircraft Maintenance Units (AMUs), aircrew, and fuselage training capabilities; and communication infrastructure capacity. For the MOB 1, hangar capacity; runway length and bearing capacity; ramp space; base operation support capacity; Squad Ops facilities with aircraft maintenance units (AMUs); aircrew, maintenance, and fuselage training capabilities; and communications infrastructure
- Environmental criteria: For both the FTU and the MOB 1, meet Clean Air Act (CAA) attainment status, local community's adoption of zoning or other land use controls to reduce encroachment and preserve the base's flying operations, waivers or absence of incompatible development in the clear zone (CZ) and/or accident potential zone (APZ), absence or limited incompatible development within noise contours above 65-decibel (dB) day-night average sound levels (DNL)
- Cost factor criteria: For both the FTU and MOB 1, favorable area construction factor based on DoD facilities Pricing Guide, dated June 2007 (DoD 2007), as updated by the June 2009 draft Office of the Secretary of Defense Pricing Guide (DoD 2009); favorable area locality cost factors

The SecAF considered the objective screening results, as well as subjective operational factors, in determining the candidate bases for the KC-46A FTU and MOB 1 missions. The subjective operational factors, also known as military judgment factors, included the following:

- Plans and Guidance
- Global and Regional Coverage
- Combatant Commander Support
- Total Force
- Beddown Timing
- Force Structure
- Training Requirements and Efficiencies
- Logistic Supportability
- Resources/Budgeting

The Strategic Basing Process described above resulted in the identification of two alternative bases for consideration for the KC-46A FTU mission and four alternative bases for the MOB 1 mission (see Figure 2-1). Although Altus AFB and McConnell AFB were identified as alternative bases for both the FTU and MOB 1 missions, neither base would be selected to host both missions because of the inherent conflicts and capacity issues associated with beddown of both training and operations squadrons at a single base.

- FTU Scenario Alternative Bases
  - Altus AFB, Oklahoma
  - McConnell AFB, Kansas
- MOB 1 Scenario Alternative Bases
  - Altus AFB, Oklahoma
  - Fairchild AFB, Washington
  - Grand Forks AFB, North Dakota
  - McConnell AFB, Kansas



**Figure 2-1. Alternative FTU and MOB 1 Basing Locations**

### 2.3 KC-46A MISSION-SPECIFIC REQUIREMENTS

Although the objective criteria described above specify the general requirements for both the FTU and MOB 1 missions, this section describes the specific details and requirements of each mission. Various factors influence siting of facilities within a developed cantonment area. These factors involve

operational functionality, safety, and compliance with regulations and policies (Federal, state, or local). The process of planning the beddown for a new aircraft and mission considers facility requirements that can be partially or wholly fulfilled by existing facilities on the base. The siting process for new construction is iterative, applying factors described below, to identify suitable sites relative to existing space and facilities that provide a reasonable operational efficiency/cost-benefit value. All construction contracts for the FTU and MOB 1 scenarios would require the use of Unified Facilities Criteria (UFC) 3-101-01, Best Management Practices, and attainment of a Leadership in Energy and Environmental Design (LEED) certificate level of silver. Construction

#### ***Missions and Scenarios***

*For the purposes of discussion in this EIS, the words scenario and mission are used interchangeably.*

and renovation projects within the 65 dB noise contour would include acoustical design considerations for façade elements and interior design requirements per UFC 3-101-01. Land use should comply with Department of Defense Instruction (DoDI) 4165.57 and Air Force Handbook 32-7084.

As part of the selection process described above, candidate bases were evaluated based on their ability to: (1) provide basic infrastructure and (2) meet the physical mission requirements with existing infrastructure and facilities (with minor renovation or additions and alterations). For this beddown, the USAF intends to use as many existing facilities as possible but recognizes that some new facilities would be required.

In addition to the infrastructure requirements, both the FTU and MOB 1 scenarios have different manpower requirements for the active-duty and reserve or guard component responsibilities. The manpower requirements for each base are different due to the expected aircraft numbers and the different reserve or guard components (Air National Guard [ANG] and Air Force Reserve Command [AFRC]) that apply to each base.

### **2.3.1 KC-46A FTU Mission-Specific Requirements**

The basic requirements for the KC-46A FTU mission include the physical infrastructure, land, air, water, energy assets, and personnel needed to support the training mission. This section describes the requirements necessary for the siting of facilities and infrastructure allocated for mission support functions, personnel authorized to execute work related to the mission, and the flying operations for the assigned FTU base.

#### *2.3.1.1 FTU Facility and Infrastructure Requirements*

The basic allocation and physical requirements to support the FTU mission are listed below:

- One (1) General Maintenance/Corrosion Control/Wash Rack Hangar
- One (1) Fuel Cell Maintenance Hangar
- One (1) Squad Ops Facility
- One (1) AMU Facility
- One (1) Flight Training Center (FTC) consisting of:
  - Six (6) Weapon System Trainers (WST)
  - Five (5) Boom Operator Trainers (BOT)
  - Four (4) Pilot Part Task Trainers (P-PTT)
  - Three (3) Boom Operator Part Task Trainers (BO-PTT)
- Two (2) FuTs
- One (1) Maintenance Operations Center
- One (1) Aircrew Flight Equipment (AFE) Facility
- Runway: minimum 147-feet wide by 7,000-feet long with a weight-bearing capability of 415,000 pounds
- Eight (8) parking spots with Fuel Pit Type III Fuel Hydrant System on the parking ramp
- Appropriate fuel supply, storage, and distribution system to support the aircraft
- Radar Approach Control (RAPCON), Instrument Landing System (ILS), Tactical Air Navigation (TACAN) and Airfield Navigational Aid System (NAVAIDS) that can support the KC-46A
- One (1) or more auxiliary airfields to support training activities

- Crash Recovery Shop with adequate vehicle parking
- A variety of shop areas (welding, hydraulics, composite repair, sheet metal, etc.) required for the mission
- Adequate housing, dormitory space, visiting quarters, and associated base support operations and personnel

Depending on location, a variety of other service-type facilities and infrastructure could be required to support the FTU mission. These could include child development centers (CDCs), utilities, roads, taxiways, overruns, dining facilities, and fitness centers.

**Hangars, Aircraft Maintenance Unit (AMU), Squadron Operations (Squad Ops).** The number of hangars required at a base is dependent on the PAA for that base. Based on Air Force Manual (AFMAN) 32-1084, eight PAA would require one general maintenance hangar, one corrosion control hangar, and one fuel cell hangar. In addition, eight PAA would drive the need for up to two additional hangar spaces either in existing facilities or in a newly constructed or modified facility. The general maintenance hangar would function primarily as an inspection hangar and secondarily as a repair hangar for scheduled and unscheduled maintenance. The corrosion control hangar would include a self-contained paint booth for touch-ups and would also function as a wash rack. The fuel cell maintenance hangar is primarily used to remove, repair, and replace fuel cell tanks from aircraft. Hangars must be appropriately sized based on the dimensions and clearance requirements of the KC-46A aircraft unless a waiver is granted.

The FTU mission would also require one Squad Ops facility and one AMU facility. These facilities are typically combined in a two-story facility, with the AMU function on the first floor and office space for command, administration, mission planning, briefing, and support on the second floor. The AMU space serves as a home base for technicians working on the flightline and also houses the administrative functions for the flightline.

The USAF has determined that the life support functions, previously included in the Squad Ops facilities, would become a stand-alone AFE facility. All facilities would be designed based on the Total Force Integration (TFI) concept.

**Flightline Development.** To support the KC-46A FTU mission, a 7,000-foot-long, 147-foot-wide runway capable of handling aircraft with a takeoff weight of 415,000 pounds is needed. The KC-46A FTU would require a minimum of eight parking spaces, plus additional space for taxiways. In addition, the FTU mission would require an available and functioning RAPCON, ILS, TACAN, and NAVAIDS capable of supporting day-night landings. The flightline would also require an Intrusion Detection and Surveillance System capable of supporting the additional aircraft.

**Fuels Infrastructure.** To support the FTU mission, the base must be able to receive up to 190,000 gallons of jet fuel per day from commercial sources to maintain adequate supply. Fuels storage at the base selected would include storage facilities with a minimum of 946,000 gallons of capacity and would be able to dispense fuel through a Type III hydrant system to support KC-46A refueling (at a rate of 2,400 gallons per minute).

**Flight Training Center (FTC) and Fuselage Trainer (FuT).** New aircraft like the KC-46A require a combination of an FTC with full WST simulators, BOT simulators, P-PTTs, classroom space, instructor accommodations/staff, command and control (C2), and administrative space/staff to receive and train aircrews and an FuT facility with fuselage trainers, classroom space, and cargo loading training yards. This training is composed of three elements of learning:

- Academics, designed to provide essential aircraft system knowledge, procedural memorization for safe operation, and tactical employment theory for combat operations
- Virtual and P-PTTs, BO-PTTs, BO simulators, and flight simulators to bridge academics and actual flying with hands-on manipulation of the aircraft and associated systems
- Actual aircraft operation to build flight-specific habit patterns, develop situational awareness, acclimate the aircrew to the high-performance environment, and achieve sufficient levels of required proficiency

Formal training involves classroom work; virtual and P-PTTs/BO-PTTs and flight simulators such as WST, FuT, and/or BOT sessions; and flight time in the aircraft. All cargo operations training would be performed in the FuT or in a parked aircraft.

The FTC requires space to house six bays for WSTs, five BOTs, four P-PTTs, three BO-PTTs, and adjoined or adjacent classroom and office space. The two FuTs require administrative and academic space, two open bays, and two cargo yards adjacent to the flightline.

***Housing and Support Facilities.*** Housing for eligible permanent-party military personnel associated with the FTU mission would include privatized base housing or housing available in the local market off base. All eligible unaccompanied enlisted permanent-party personnel would be housed in dormitories under the FTU mission. Visiting Quarters are required for all unaccompanied officer and enlisted students. Civil servant and contractor personnel supporting the FTU would not be authorized on-base housing or lodging.

#### *2.3.1.2 FTU Personnel Requirements*

Basing of the KC-46A FTU mission would require sufficient personnel to operate and maintain the aircraft and to provide necessary support services. Depending on the existing personnel, including the reserve component of the mission at the selected FTU base, the requirement would be between 300 and 450 full-time personnel. These requirements would also be influenced by the reserve or guard component of the mission. Personnel would include active-duty and reserve (both full- and part-time), officer, enlisted, DoD civilian, contractor support personnel, and BOS personnel. In addition to the personnel required to support the mission, the family members or dependents of full-time military personnel are also included in the analysis. Family members and dependents were estimated at 2.5 times 65 percent of the full-time military personnel. School-age dependents of full-time military personnel were estimated at 1.5 times 65 percent of full-time military personnel.

#### *2.3.1.3 FTU Flight Operations*

KC-46A flight operations at the FTU base would focus on training aircrews to develop the capability needed for all mission requirements. Training events would include such skills as formation flying, advanced aircraft handling, and tactics related to the different missions expected of the multi-role KC-46A. Aircrews would train at a home base and at auxiliary airfields, and the majority of training would be completed in simulators. Flight training activities are described below.

Training activities may be categorized as a sortie and/or an operation. The majority (99 percent, or 1,800) of annual sorties departing from the home base at the FTU would be training sorties and would include a variety of prescribed skills that the crew must complete. A small number (1 percent, or 26) of annual sorties from the home base would be mission sorties where the aircraft departs the base to complete a given mission (e.g., refueling another aircraft). All sorties involve one takeoff and landing from the home base location.

Flight operations could include takeoff, closed pattern (a closed pattern consists of two portions: a takeoff/departure and an approach/landing, and is therefore considered two operations), and landing. Additional flight operations for KC-46A training events are described below.

A typical KC-46A training sortie would be similar to a KC-135 training sortie and would involve students and instructors departing from the base, climbing to altitude for aerial refueling training, and accomplishing a variety of different flight operations. Training sorties typically depart from and return to the home base on the same day (mission sorties may return to the home base on a different day). Flight training in local patterns would be completed at the home base or by using an auxiliary airfield, either military or civilian, depending on the availability of suitable facilities, within a convenient range of the home base. Existing associated air refueling (AR) tracks would be used for tanker and receiver training. Much like the KC-135 student pilots, KC-46A students would use the auxiliary airfields for various landings, such as a straight-in landing, an overhead break (overflying the airfield, then maneuvering within visual sight of the runway to get in a position to safely land), touch-and-go landings, conventional landings, or closed patterns.

*The terms sortie and operation are used to describe flight activities. Each has a different meaning and applies to a different set of flight activities. These terms are also used to quantify flight activities for the purpose of environmental impact analysis. A **sortie** consists of a single military aircraft flight from the initial takeoff through the final landing and includes all activities that occur during that mission. For this EIS, the term **sortie** is used when referring to the quantity of aircraft operations from the airfield. A sortie can include more than one operation. The term **operation** consists of a single activity such as a landing or a takeoff. During a single sortie, one KC-46A could perform several operations; therefore, the number of operations could exceed the total number of sorties.*

Mirroring the current KC-135 FTU, KC-46A training would take place 240 days annually (following a standard 5-day training week). The KC-46A FTU average sortie would be around 5 hours in duration. The current training plan for the KC-46A FTU is an average of 7.5 sorties per day.

During training activities, aircrews would use two types of landing and takeoff profiles, a standard profile and a tactical profile. Standard profiles use a typical straight-in or straight-out landing or takeoff. Tactical landings and takeoffs are a more rapid spiral-in or spiral-out maneuver. About 10 percent of training takeoffs would use a standard profile and about 90 percent would use a tactical profile. About 20 percent of training landings would use a straight-in landing profile and about 80 percent would use tactical profiles.

Each training sortie would perform an average of approximately 10.5 closed patterns (which equates to about 21 airfield operations). About 60 percent of daytime sorties would fly in local patterns near the home base and about 40 percent would be flown at the auxiliary airfields outside the local area. All nighttime operations (between the hours of 10:00 P.M. and 7:00 A.M.) would be conducted at the FTU base only.

#### 2.3.1.4 FTU Airspace Use

Aircrews associated with the FTU would use a combination of existing airspace to perform training missions. The Federal Aviation Administration (FAA) has designated airspace within the United States as Controlled, Special Use, Other, or Uncontrolled. A sortie-operation is the use of one airspace unit by one aircraft. The number of sortie-operations is used to quantify the number of times a single aircraft uses an airspace unit and is not a measure of how long an aircraft uses an airspace unit. Special Use Airspace (SUA) identified for military and other governmental activities is charted and published by the FAA. SUA is designated airspace within

which flight activities are conducted that requires confinement of participating aircraft or may place operating limitations on nonparticipating aircraft. SUA includes Military Operations Areas.

The KC-46A would be operated in existing airspace, and the types of flight operations would mirror the existing or historical KC-135 operations. The KC-46A would use existing AR tracks and fuel jettison areas, if necessary. FTU sorties involving refueling training and practice would primarily take place in designated AR tracks.

### **2.3.2 KC-46A MOB 1 Mission-Specific Requirements**

The basic requirements for the three KC-46A MOB 1 squadrons (12 aircraft per squadron) include the physical infrastructure, land, airspace, personnel, and water and energy assets needed to support the MOB 1 mission. This section presents the criteria that apply to the MOB 1 siting, facilities for mission and mission support functions, and personnel authorized to execute work related to the mission and flying operations required as part of the MOB 1 mission.

#### **2.3.2.1 MOB 1 Facility and Infrastructure Requirements**

The basic allocation and physical requirements necessary to support three squadrons of 12 KC-46A are listed below.

- Four (4) General Maintenance Hangars
- One (1) Fuel Cell Hangar
- One (1) Corrosion Control/Wash Rack Hangar
- Three (3) Squad Ops Facilities
- Three (3) AMU Facilities
- One (1) FTC consisting of:
  - Three (3) WSTs
  - Two (2) BOTs
  - One (1) P-PTT
- One (1) FuT
- One (1) Maintenance Training Facility (MTF)
- Supply Warehousing, Flightline Support Facility and Aircraft Parts Storage
- Aerospace Ground Equipment (AGE) storage and parking
- Aerial Port Cargo Facility/Processing Yard and Passenger Terminal
- Crash Recovery Shop with adequate vehicle parking
- Alternate Mission Equipment (AME) Storage and Maintenance Facility (pallets, etc.)
- Runway: minimum 147-feet wide by 7,000-feet long with a weight-bearing capability of 415,000 pounds
- Twenty-three (23) parking spots with Fuel Pits and a Type III Fuel Hydrant System on the parking ramp
- Appropriate fuel supply, storage, and distribution systems to support 36 PAA
- RAPCON, ILS, TACAN, and NAVAIDS that can support the KC-46A
- A variety of shop areas (welding, hydraulics, composite repair, sheet metal, etc.) required for the mission

Depending on the location, a variety of other service-type facilities and infrastructure could be required to support the MOB 1 mission. These could include CDCs, utilities, roads, taxiways, overruns, dining facilities, fitness center, visiting quarters, dormitories, and possibly new housing.

**Hangars, Aircraft Maintenance Units (AMUs), Squadron Operations (Squad Ops).** The number of hangars required at a base is dependent on the PAA for that base. Based on AFMAN 32-1084, 36 PAA would require four general maintenance hangars, one fuel cell hangar, and one corrosion control hangar. The general maintenance hangar would function primarily as an inspection hangar and secondarily as a repair hangar. The corrosion control hangar would include a self-contained paint booth for touch-ups and would also function as a wash rack. The fuel cell hangar would primarily be used to remove, repair, and replace fuel cell tanks from aircraft.

The MOB 1 mission would also require three Squad Ops facilities and three AMU facilities. These would be two-story facilities, as described in the FTU section.

The USAF has determined that the life support functions, previously included in the Squad Ops facilities, would become a stand-alone AFE facility. All facilities would be designed based on the TFI concept.

**Flightline Development.** To support the KC-46A MOB 1 mission, a 7,000-foot-long, 147-foot-wide runway capable of handling aircraft with a takeoff weight of 415,000 pounds is needed. The 36 PAA would require 23 parking spaces, plus additional space for taxiways. In addition, the MOB 1 mission would require an available and functioning RAPCON, ILS, TACAN, and NAVAIDS capable of supporting day-night landings. The flightline would also require an Intrusion Detection and Surveillance System capable of supporting the additional aircraft.

**Fuels Infrastructure.** To support the MOB 1 mission, the base must be able to receive up to 360,000 gallons of jet fuel per day from commercial sources to maintain adequate supply. Fuels storage at the base selected would include storage facilities with up to 1.8 million gallons of capacity and would be able to dispense fuel through a Type III hydrant system.

**Flight Training Center (FTC) and Fuselage Trainer (FuT).** New aircraft like the KC-46A require a combination of a formal training center with full system trainers, part task trainers, simulators, classroom space, instructor accommodations/staff, C2, and administrative space/staff to receive and train aircrews. Although the MOB 1 scenario's primary mission would not be training, some training would be required. Formal training involves classroom work; virtual and P-PTTs and flight simulators such as WST, FuT, and BOT sessions; and flight time in the aircraft. All cargo operations training would be performed in the FuT or in a parked aircraft.

The FTC requires three bays for the WSTs, two BOTs, one P-PPT, an adjoined or adjacent classroom, and office space. The FuT requires administrative and academic space, one open bay, and one cargo yard adjacent to the flightline.

**Housing and Support Facilities.** Housing for eligible permanent-party military personnel associated with the MOB 1 mission would include privatized base housing or housing available in the local market off base. For the MOB 1 mission, dormitories would be used for all unaccompanied enlisted students and for permanently assigned, unmarried first-term Airmen. Adequate child care, medical, fitness center, and other BOS/force support must also be available.

#### 2.3.2.2 MOB 1 Personnel Requirements

Basing of the KC-46A MOB 1 mission would also require basing sufficient personnel to operate and maintain the aircraft and to provide necessary support services. Depending on the existing personnel, including the reserve or guard component of the mission at the selected MOB 1 base,

the requirement would be between 1,700 and 1,800 full-time personnel. This would include both active-duty and reserve (both full- and part-time), officer, enlisted, DoD civilian, contractor support personnel, and BOS personnel. In addition to the personnel required to support the mission, the dependents or family members of full-time military personnel are also included in the analysis. Family members and dependents were estimated at 2.5 times 65 percent of the full-time military personnel. School-age dependents of full-time military personnel were estimated at 1.5 times 65 percent of full-time military personnel.

#### *2.3.2.3 MOB 1 Flight Operations*

KC-46A aircrews associated with the MOB 1 mission would complete mission sorties and local training sorties to maintain proficiency in the aircraft. These sorties would originate at the home base, and no auxiliary airfields would be required for the MOB 1 beddown. The majority of proficiency training would occur in simulators. For those tasks that require in-flight training, a typical training sortie is described below.

A typical KC-46A proficiency training sortie would be similar to a KC-135 training sortie and would include a takeoff from the home base, climb to altitude for aerial refueling training, accomplishing takeoff, landing, and closed pattern training and then a return to the home base for a landing. Proficiency training sorties typically depart from and return to the home base on the same day. A mission sortie typically departs the home base and returns on a later day. All sorties involve one takeoff and landing from the home base. The following information describes sorties for most bases, but could vary depending on the MOB 1 location.

Typically, training sorties would depart to an existing AR track or other training area and return to the home base. About 75 percent of training takeoffs would use a standard profile, while about 25 percent would use a tactical profile. Upon arrival, about 60 percent of these sorties would use a straight-in landing profile, while about 40 percent would use varied approach profiles. Most training sorties would perform about six closed patterns (which equates to about 12 airfield operations). Any sorties between the hours of 10:00 P.M. and 7:00 A.M. local time would be considered environmental night.

The majority of annual sorties departing from home base would be training sorties to maintain aircrew proficiencies. A minority of sorties departing from home base would be mission sorties. Training sorties are normally performed 6 days a week, or 312 days per year. Mission sorties could occur 365 days a year. About 90 percent of all sorties are during the day and 10 percent are at night. Mission sorties generally use a standard takeoff profile, and 80 percent are non-heavyweight (takeoff weight of 253,000 pounds or less). Mission sorties normally arrive back at the home base using a standard final approach, with the aircraft coming to a full stop on landing.

#### *2.3.2.4 MOB 1 Airspace Use*

The MOB 1 squadrons would use a combination of existing airspace to perform their missions. The FAA has designated the airspace within the United States as Controlled, Special Use, Other, or Uncontrolled. SUA identified for military and other governmental activities is charted and published by the FAA. SUA is designated airspace within which flight activities are conducted that requires confinement of participating aircraft or may place operating limitations on nonparticipating aircraft.

The KC-46A would be operated in existing airspace, and the types of flight operations would mirror the existing or historical KC-135 operations. The KC-46A would use existing AR tracks and fuel jettison areas. Flight activities involving refueling training and practice would primarily occur in designated AR tracks.

### 2.3.3 Initial Operational Test and Evaluation (IOT&E)

Four production-representative KC-46A aircraft, to be used during Initial Operational Test and Evaluation (IOT&E), would arrive at the MOB 1 in early 2016. During IOT&E, the Air Force Operational Test and Evaluation Center would test the capabilities of the KC-46A under realistic operational conditions. The MOB 1 would provide that realistic operational environment. Activities evaluated would include basic flight operations, sortie generation, aircraft maintenance, refueling system performance, supply support, and basing requirements.

KC-46A aircraft operations during IOT&E would be very similar to the existing KC-135 operations occurring at the base. Until specific operational procedures are developed for the KC-46A, the USAF would use operational procedures developed for the KC-135 aircraft. During IOT&E, expected operations include single ship and formation launches and recoveries at varying fuel weights to include maximum performance takeoffs, simulated combat tactical maneuvering, and formation surge operations (launching all test aircraft in a minimum amount of time) during the day and night. The intent for IOT&E is that the KC-46A would be operated similar to the KC-135, utilizing the local base and global operating procedures.

The USAF anticipates that, as more knowledge is gained about the new aircraft and crewmember needs, some adjustments would occur using an adaptive management approach to achieve the most streamlined and sustainable operational and training programs.

## 2.4 DESCRIPTION OF ALTERNATIVE BASING LOCATIONS

Depending on available infrastructure, facilities, and to some degree, personnel, available for the KC-46A FTU or MOB 1 mission, proposed construction, demolition, renovations, and incoming personnel numbers vary between alternatives. The facility siting analysis for each alternative base took into consideration the functional requirements of the FTU and MOB 1 missions and compared them with the existing infrastructure and environmental constraints at each base. The following subsections provide specifics about the beddown and operations at each of the alternative bases. Table 2-2 provides a summary comparison of the alternatives for each mission, along with the No Action Alternative.

**Table 2-2. Summary of Alternatives**

<b>Alternative Components</b>	<b>Altus AFB FTU/MOB 1</b>	<b>Fairchild AFB MOB 1</b>	<b>Grand Forks AFB MOB 1</b>	<b>McConnell AFB FTU/MOB 1</b>	<b>No Action Alternative</b>
Current KC-135 PAA	18	30	0	44	Varies by location
Proposed KC-46A PAA	Up to 8/36	36	36	Up to 8/36	0
Facilities and Infrastructure	See Sections 2.3.1 and 2.3.2 for the FTU- and MOB 1-specific facilities and infrastructure requirements.				None
Personnel and Dependent Change <sup>a</sup>	+578/+4,917	+1,095	+4,526	+570 <sup>b</sup> /-291 <sup>c</sup>	0
Aircraft Operations Change <sup>d</sup>	+41,364/+33,710	+18,796	+33,710	+41,364 <sup>e</sup> /+9,189 <sup>e</sup>	0

<sup>a</sup> Does not include DoD civilians, part-time Reservists or contractors (other base personnel) under the assumption that these are local.

<sup>b</sup> The McConnell AFB FTU personnel and dependent numbers are different from the Altus AFB FTU personnel and dependent numbers because the FTU mission at McConnell AFB would be additive and the MOB 1 mission would be a replacement mission.

<sup>c</sup> The MOB 1 scenario is a replacement mission at McConnell AFB with a net reduction in full-time military personnel.

<sup>d</sup> Aircraft operations change is the difference between the total baseline and total projected for all aircraft types.

<sup>e</sup> Baseline PAA for McConnell AFB is 44 KC-135 aircraft.

### **2.4.1 Altus Air Force Base (FTU or MOB 1)**

The USAF is considering two different actions for Altus AFB. One action, for which Altus AFB has been selected as the Preferred Alternative, includes the beddown of one FTU squadron by Air Education and Training Command (AETC) with up to eight KC-46A aircraft. A second action would be the beddown of three squadrons by AMC with 36 KC-46A aircraft for the MOB 1 mission. These are separate actions; Altus AFB could only be selected for the implementation of one of these actions (as described in Chapter 1). The classic association (active led, AFRC supported) would continue if Altus AFB is selected for beddown of the KC-46A FTU or MOB 1 mission.

Section 2.4.1.2 describes the personnel changes, physical and development changes, airfield operations, and changes in use of auxiliary airfields that would occur with implementation of the FTU scenario. Section 2.4.1.3 describes changes that would occur with implementation of the MOB 1 scenario. No auxiliary airfields would be used as part of the MOB 1 scenario.

#### **2.4.1.1 Altus AFB Overview**

Altus AFB is located in the southwestern corner of Oklahoma, adjacent to the City of Altus (see Figure 2-2). The base is at a field elevation of 1,382 feet and covers an area of approximately 8,016 acres. Two runways (13,440 feet and 9,000 feet in length) and one assault landing zone (3,500 feet in length) are located at Altus AFB. The overall layout of existing facilities and infrastructure at Altus AFB is shown on Figure 2-3.

Originally named Altus Army Airfield, the base was constructed in 1942, with military personnel and aircraft arriving in 1943. The primary training aircraft in the early years of Altus AFB were the Cessna AT-17 Bobcat, the Curtiss-Wright AT-9 Jeep, and the C-45 Expeditor. Altus AFB was inactive from May 1945 until August 1953, when many bases were reactivated following the onset of the Korean War. In the early 1960s, under the 577th Missile Squadron, Altus AFB maintained 12 Atlas intercontinental ballistic missile silos within a 40-mile radius of the base. In 1967, Altus AFB became home to the C-141 Starlifter and the C-5 Galaxy under the 443rd Military Airlift Wing of the Military Airlift Command; in the early 1970s, Altus AFB was assigned KC-135 aircraft under the 340th Air Refueling Wing (ARW). The C-17 Globemaster arrived at Altus AFB in 1996. In 2007, both the C-141 and C-5 ceased operating at Altus AFB.

Altus AFB is currently home to 97th Air Mobility Wing (AMW) and supports four major units: the 97th Operations Group, the 97th Mission Support Group, the 97th Maintenance Directorate, and the 97th Medical Group. The 97 AMW provides formal initial and advanced specialty training for the C-17 Globemaster and the KC-135 Stratotanker. In 2012, the AFRC's 730th Air Mobility Training Squadron (AMTS) was reactivated at Altus AFB as part of the USAF's TFI. The 730 AMTS works side by side with active-duty Airmen in the 97 AMW training C-17 and KC-135 aircrew members.

#### **2.4.1.2 FTU Beddown Specifics**

The USAF determined that Altus AFB's infrastructure and base resources could accommodate the basic requirements for the KC-46A FTU mission within the constraints set by the alternative narrowing process described in Section 2.2. This section details the actions that would occur at Altus AFB if the base were selected for the basing of the KC-46A FTU mission. The FTU scenario would be additive to the current mission at Altus AFB, and the first four of up to eight aircraft would be scheduled to arrive in 2016. The current aircraft inventory at Altus AFB includes 17 C-17 aircraft and 18 KC-135 aircraft.

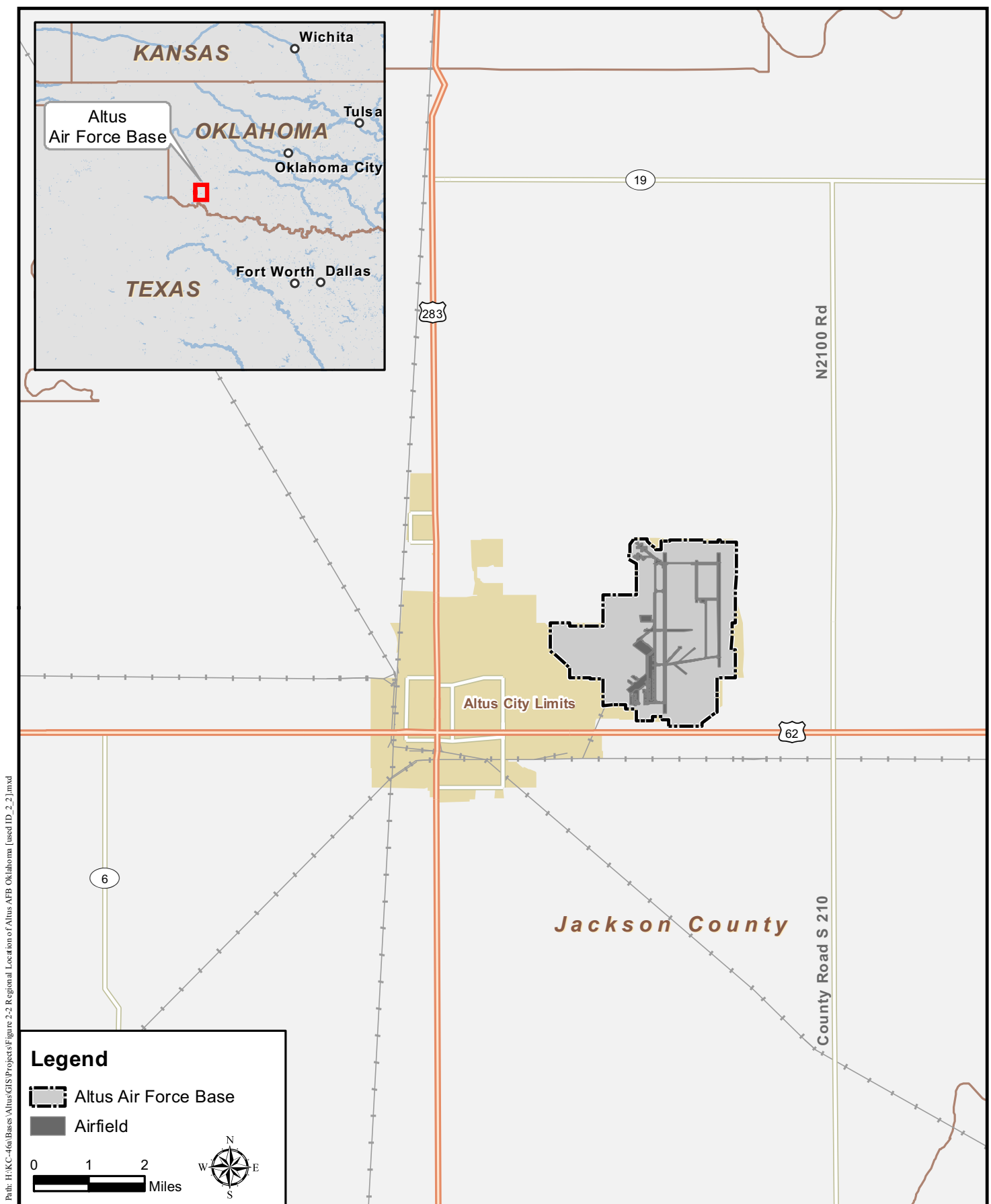


Figure 2-2. Regional Location of Altus AFB, Oklahoma

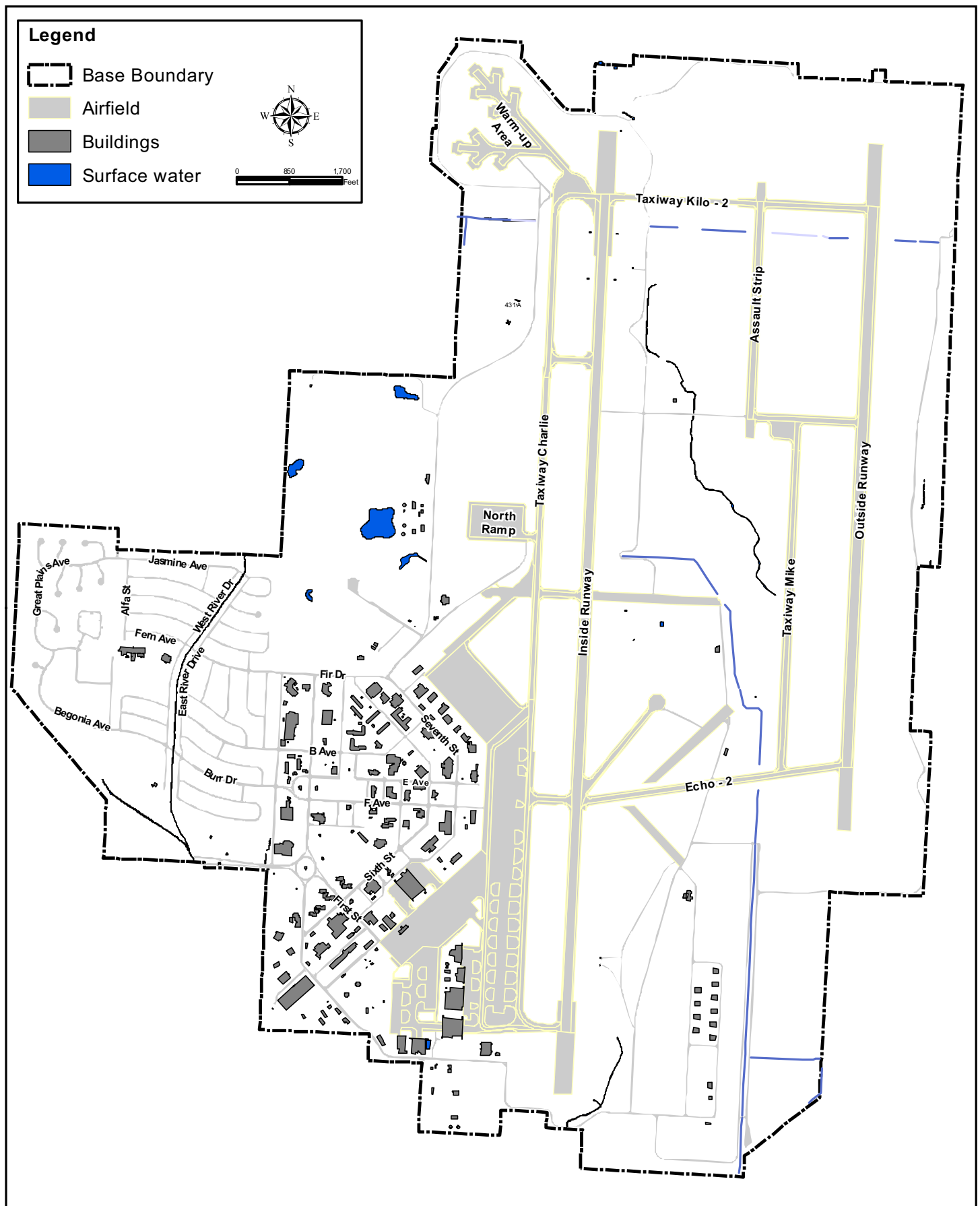


Figure 2-3. Base Overview Altus AFB

#### 2.4.1.2.1 Facilities and Infrastructure

The overall facility requirements for the FTU beddown are described in Section 2.3.1.1. Most of these requirements are met through existing infrastructure and facilities on Altus AFB. However, some modifications and additions to existing facilities and infrastructure would be required at Altus AFB to support KC-46A FTU training operations. Table 2-3 lists the KC-46A FTU-related projects that would take place within the previously disturbed cantonment area of Altus AFB, as shown on Figure 2-4.

Existing flight operations and refueling activities associated with the C-17 and KC-135 FTUs would continue during demolition and reconstruction activities. During demolition and construction of the new hydrant systems, additional refueling vehicles would be used to maintain the C-17 and KC-135 missions.

**Table 2-3. Facilities and Infrastructure Projects for the KC-46A FTU Scenario at Altus AFB**

<b>Project</b>	<b>Facility Size (Square Feet)</b>
<b>Demolition</b>	
Building 170 (to make room for new FuT Facility)	25,469
Building 171 (to make room for new Flight Training Facility)	11,264
<b>Total Square Feet</b>	<b>36,733</b>
<b>Renovation</b>	
Building 87, Group Headquarters and Mission Training	6,237
Building 394, Contractor Supply Storage	7,000
<b>Total Square Feet</b>	<b>13,237</b>
<b>New Construction</b>	
FTC	36,821
FuT Facility	45,690
Hydrant pit (one pit added to existing system)	~100
<b>Total Square Feet</b>	<b>82,611</b>
<b>Additions/Alterations</b>	
Building 193, Squad Ops/AMU	29,995
Building 518, Tail Enclosure and Fuel Cell Expansion	12,322
Building 285, Tail Enclosure and Tool Crib Expansion	~12,000
<b>Total Square Feet</b>	<b>54,317</b>

#### 2.4.1.2.2 Personnel

The current personnel at Altus AFB and the projected increase necessary to support the KC-46A FTU mission are provided in Table 2-4. Currently, the base has about 4,000 personnel, including military, part-time reserve, government civilians, contractors, and students. The current student population varies depending on training and syllabi schedules, but represents an average daily student load (ADSL) at Altus AFB. The ADSL for the KC-46A FTU would be 200. Because the FTU mission at Altus AFB would be in addition to the existing missions, an increase in personnel would be anticipated. The KC-46A FTU mission would require approximately 144 full-time military (includes 119 active-duty, 12 reserve, and 13 BOS) personnel, approximately 20 part-time reserve personnel, approximately 252 DoD civilian personnel, and approximately 23 contractors (categorized as “other base personnel”).

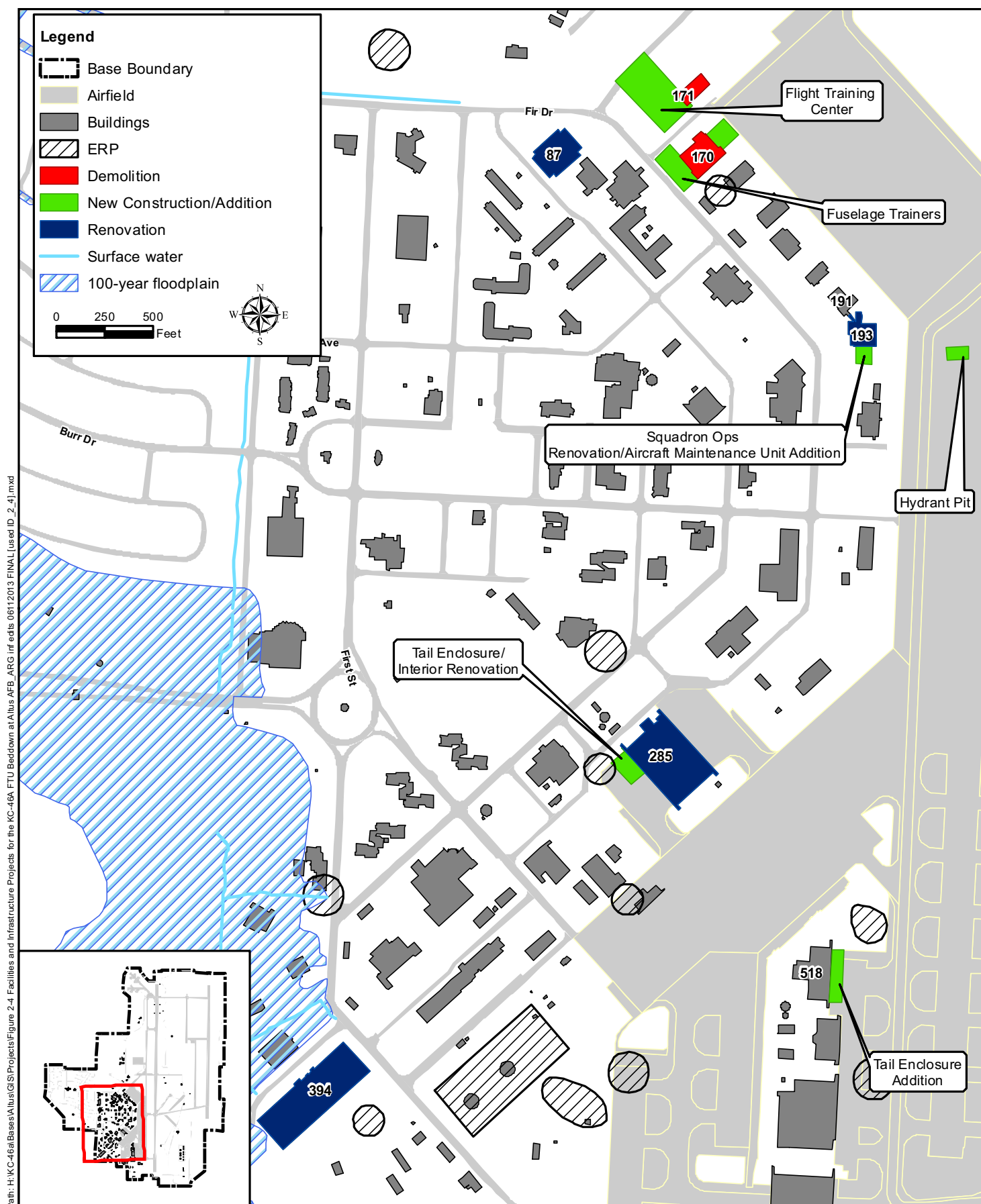


Figure 2-4. Facilities and Infrastructure Projects for the KC-46A FTU Scenario at Altus AFB

**Table 2-4. Altus AFB KC-46A FTU Scenario Personnel and Dependent Changes**

Personnel	Baseline	KC-46A FTU Scenario	Total
Military (full-time)	1,379	144	1,523
Military Dependents and Family Members	1,051	234 <sup>a</sup>	1,285
Part-Time Reservists	19	20	39
Students	362	200	562
DoD Civilian	1,243	252	1,495
Other Base Personnel	907	23	930
<b>Total</b>	<b>4,961</b>	<b>873</b>	<b>5,834</b>

<sup>a</sup> Dependents estimated at 2.5 times 65 percent of full-time military personnel only.

About 1,051 military dependents, currently associated with the full-time military personnel at Altus AFB, live in communities surrounding the base. Approximately 234 family members and dependents would be anticipated to accompany the full-time military personnel associated with the KC-46A FTU mission.

#### 2.4.1.2.3 Flight Operations

Table 2-5 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A FTU mission at Altus AFB to the existing baseline mission. The table shows that the total annual operations at Altus AFB would increase from 109,459 per year to 150,823, resulting in an approximate 38 percent increase in annual aircraft operations.

**Table 2-5. Altus AFB Baseline and Projected Annual FTU Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual
C-17	240	41.98	10,075	172.78	41,467	214.76	51,542	41.98	10,075	172.78	41,467	214.76	51,542
KC-135	240	16.50	3,960	219.20	52,608	235.7	56,568	16.50	3,960	219.20	52,608	235.70	56,568
Transient <sup>c</sup>	240	2.84	682	2.78	667	5.62	1,349	2.84	682	2.78	667	5.62	1,349
KC-46A <sup>d</sup>	240	0	0	0	0	0	0	15.22	3,653	157.13	37,711	172.35	41,364
<b>Total</b>		<b>61.32</b>	<b>14,717</b>	<b>394.76</b>	<b>94,742</b>	<b>456.08</b>	<b>109,459</b>	<b>76.54</b>	<b>18,370</b>	<b>551.89</b>	<b>132,453</b>	<b>628.43</b>	<b>150,823</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> The primary transient military aircraft types using Altus AFB include C-130, C-17, C-21, and T-38.

<sup>d</sup> The normal flying hours for Altus AFB are 9:30 A.M. to 2:30 P.M. However, approximately 20 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

#### 2.4.1.2.4 Auxiliary Airfields

The existing KC-135 and C-17 aircraft at Altus AFB currently use four auxiliary airfields. The KC-46A aircraft associated with the FTU would use the same AR tracks, the four auxiliary airfields and, if necessary, fuel jettison areas as are currently used by the KC-135 FTU. A variation to the typical training sortie described above could involve performing closed patterns at an auxiliary airfield. Auxiliary airfields currently used by Altus AFB include Clinton-Sherman Industrial Airpark (CSM), Lubbock Preston Smith International Airport (LBB), Rick Husband Amarillo International Airport (AMA), and Fort Worth Alliance Airport (AFW). The location of these airfields relative to Altus AFB is shown on Figure 2-5.



Figure 2-5. Location of Auxiliary Airfields for the KC-46A FTU Scenario at Altus AFB, Oklahoma

The KC-46A aircrews would use the same flight tracks that the KC-135 aircraft currently use to access the auxiliary airfields. KC-46A aircrews associated with the FTU would fly a combined estimate of 6,516 annual aircraft operations at the four auxiliary airfields.

***Rick Husband Amarillo International Airport (AMA).*** This commercial airport is co-located with the former Amarillo AFB, a former Strategic Air Command (SAC) airfield with a 13,502-foot-long runway (Runway 04/22). This runway is now used primarily for commercial aviation, but still supports a small number of military operations each year. Runway 13/31 is the second runway at AMA measuring 7,901 feet in length. AMA encompasses approximately 3,547 acres and is owned by the City of Amarillo, Texas. There are currently 54,115 annual airfield operations at AMA. Both KC-135 aircraft and C-17 aircraft from Altus AFB currently use the airport for training operations.

***Clinton Sherman Industrial Airpark (CSM).*** As a former SAC base, CSM has one of the longest runways in Oklahoma—Runway 17R/35L, measuring 13,503 feet in length and approximately 300 feet wide. This airpark also has a second runway, Runway 17L/35R, measuring 5,193 feet in length. Owned by Oklahoma Space Industry Development Authority, CSM is located approximately 15 miles southwest of Clinton, in Washita County, Oklahoma. The airpark encompasses approximately 2,700 acres and is an ideal site for pilot training because of the size of the runway and the remote nature of the location. CSM is currently being used by KC-135 and C-17 pilots from Altus AFB, as well as by pilots from Vance and Sheppard AFBs. CSM also supports Navy and non-commercial flight operations. CSM currently supports a total of 28,485 annual airfield operations.

***Lubbock Preston Smith International Airport (LBB).*** This airfield served a military function during World War II, but has been in commercial service since the 1950s. With three runways, LBB is one of the busiest airports in Texas and supports a hub for Federal Express. The longest runway at LBB is Runway 17R/35L, measuring 11,500 feet in length. The other two runways at LBB are Runways 8/26 and 17L/35R, with respective lengths of 8,003 and 2,891 feet. LBB encompasses approximately 3,000 acres and is owned by the City of Lubbock, Texas. LBB currently supports 67,919 annual operations, including training operations by both the KC-135 and C-17 aircraft from Altus AFB.

***Fort Worth Alliance Airport (AFW).*** This airport was developed as a commercial airport in 1989 and served to off-load some of the excess traffic from Dallas-Fort Worth Airport. AFW has two parallel runways; Runway 16L/34R is 9,600 feet in length and Runway 16R/34L is 8,220 feet in length. AFW encompasses approximately 1,198 acres and is owned by the City of Fort Worth, Texas. There are currently 100,756 annual airfield operations at AFW, of which military operations account for about 15 percent. KC-135 aircraft from Altus AFB make up a portion of the military aircraft operations.

#### ***2.4.1.3 MOB 1 Beddown Specifics***

This section details the actions that would occur at Altus AFB if selected to base 36 KC-46A aircraft for the MOB 1 mission. The MOB 1 mission would add to the existing KC-135 and C-17 FTU missions at Altus AFB.

##### ***2.4.1.3.1 Facilities and Infrastructure***

The overall facility requirements for the MOB 1 beddown are described in Section 2.3.2.1. Most of these requirements are met through existing infrastructure. However, the proposed MOB 1 beddown at Altus AFB would require new construction and demolition (C&D) of

facilities, as well as modifications to some existing facilities. The projects that would be necessary to support the KC-46A MOB 1 mission at Altus AFB are listed in Table 2-6.

**Table 2-6. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Altus AFB**

<b>Project</b>	<b>Facility Size (Square Feet)</b>
<b>Demolition</b>	
Building 82	10,663
Building 171	11,264
Building 551	1,319
Building 554	725
Building 557	725
Building 563	144
Building 564	1,968
Building 565	1,968
Ramp Area	480,000
<b>Total Square Feet</b>	<b>508,776</b>
<b>Renovation</b>	
Renovate Taxiway G and Reconstruct K-I	147,006
Repair Concrete Overrun	351,000
Building 87, Wing Headquarters (Operations Group, ANG, and AFRC)	101,552
Building 170, Aircraft Parts Storage/Contractor Supplies	<100
Building 285, Construct Interior Wall and Expand Hydraulic Shop	<100
<b>Total Square Feet</b>	<b>599,758</b>
<b>New Construction</b>	
Ramp Area and AGE Apron	2,500,000
Install Box Culvert in Existing Irrigation Canal	5,000
Refueling Truck Parking Yard	8,325
Hangar Row Road	104,400
Squadrons Operations Facility with AMU (3 buildings)	111,000
Maintenance Hangar with AME (2-bay)	95,768
Fuel Cell Hangar	64,972
Maintenance Hangar (2-bay)	127,728
Install Ramp Lighting	SF not applicable
Maintenance Training Facility (MTF)	44,300
Fuel Tanks, Pumps, Hydrant System	222,000
FuT Facility	10,600
Weapons System Trainer	26,100
Two Dormitories (96 rooms)	66,366
Visiting Quarters	63,100
<b>Total Square Feet</b>	<b>3,449,929</b>
<b>Additions/Alterations</b>	
Building 369, Add Vault	7,500
Building 156, Gym Addition	14,400
<b>Total Square Feet</b>	<b>21,900</b>

With the exception of the new ramp, taxiway lighting, refueling truck parking yard, and hangar row road, renovation and additions/alterations of buildings and repairs to existing runway overruns and taxiways would be conducted primarily on existing improved surfaces. The large new ramp area, refueling truck parking yard, and hangar row road would be constructed on unimproved land along the flightline (see Figures 2-6 and 2-7).

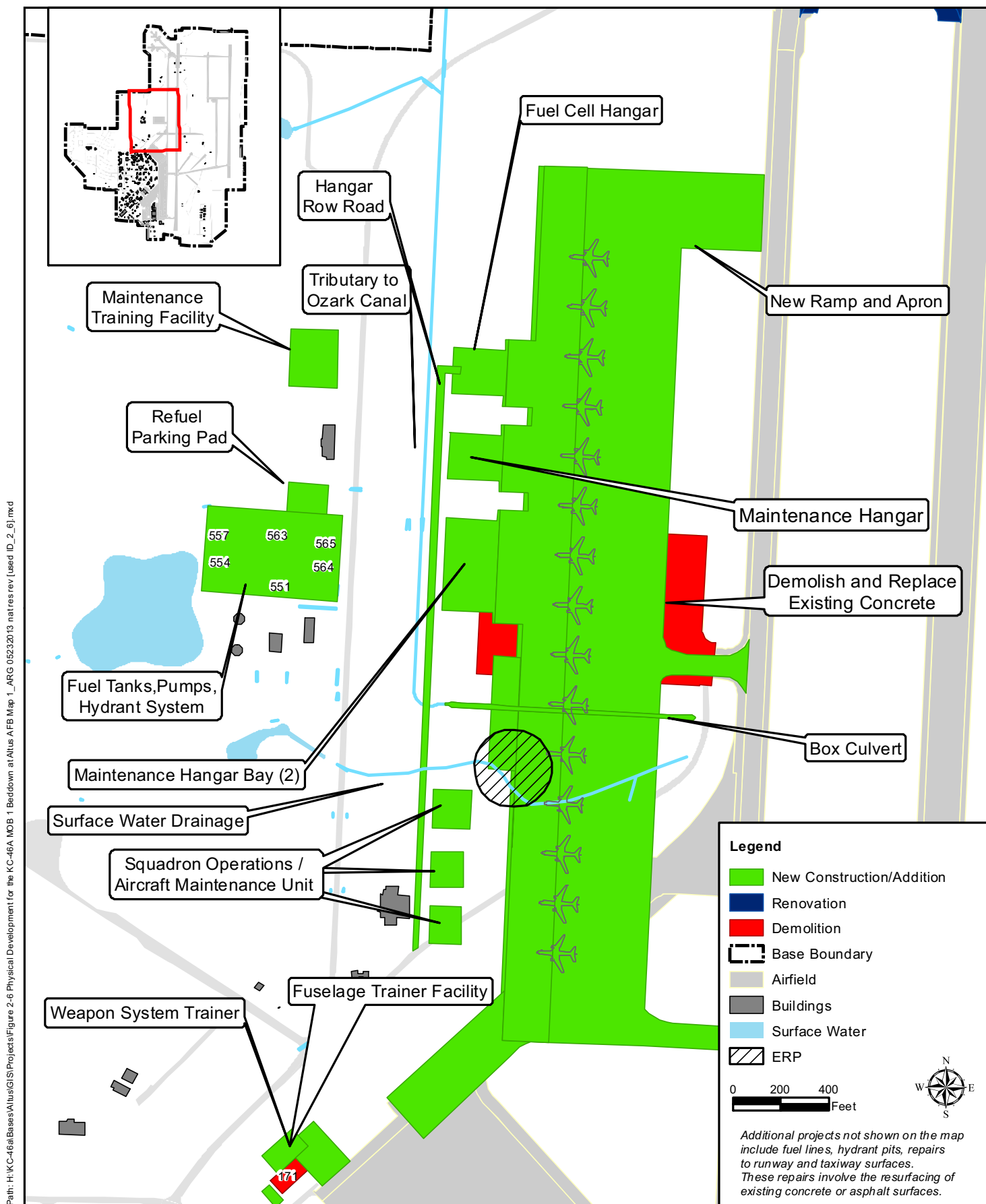
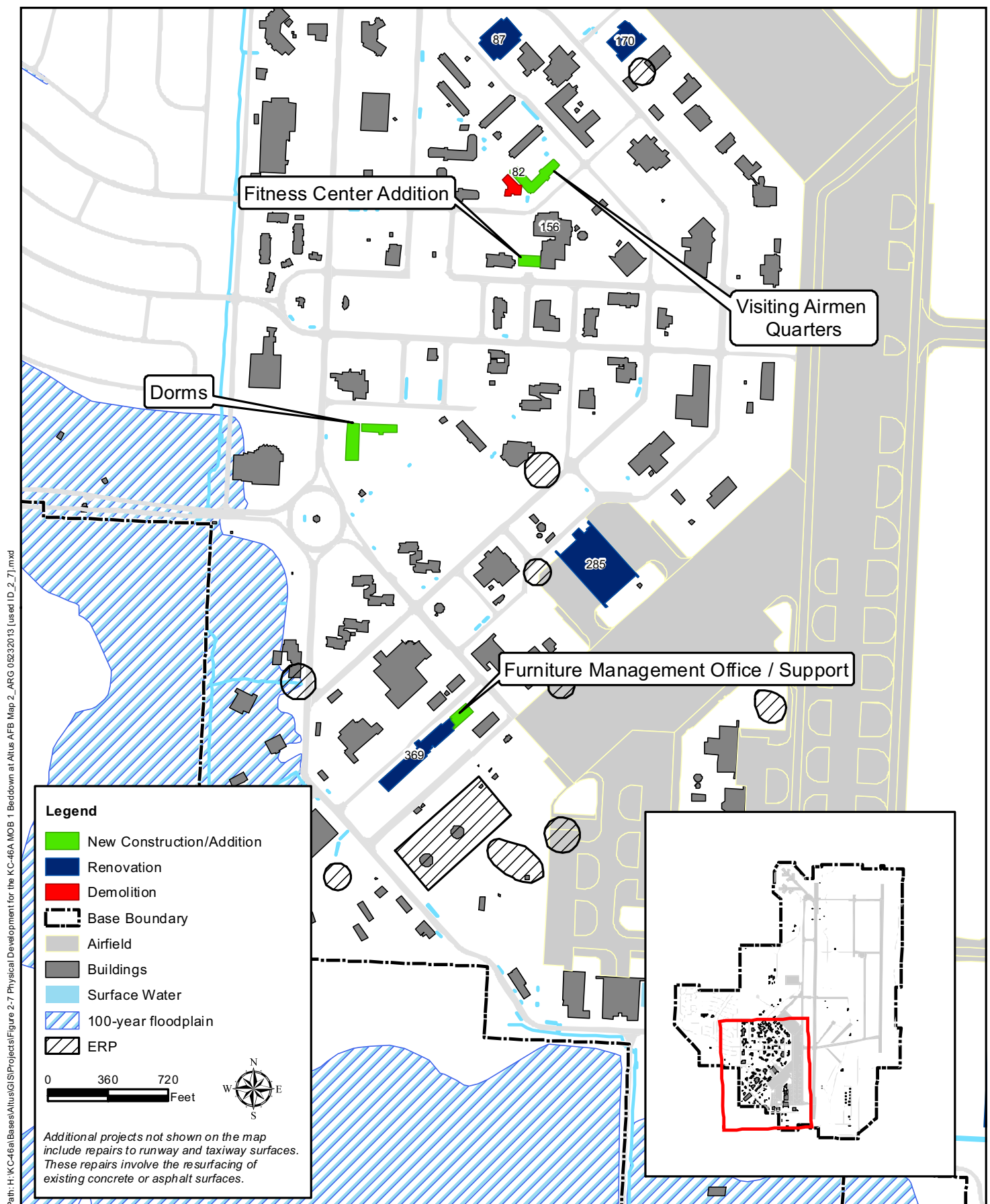


Figure 2-6. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Altus AFB - Map 1



**Figure 2-7. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Altus AFB - Map 2**

Demolition of nine structures would involve the removal of about 12 acres of existing structure. Removal of the existing refueling equipment, two fuel storage tanks, and the north ramp hydrant fuel system is also included in the demolition plan.

Existing flight operations and refueling activities associated with the C-17 and KC-135 FTUs would continue during demolition and reconstruction activities.

A construction transition plan would be implemented for the taxiways, and overrun demolition and construction would be phased so as to not interfere with existing airfield operations. During demolition and construction of the new hydrant systems, additional refueling vehicles would be used to support the C-17 and KC-135 missions.

#### 2.4.1.3.2 Personnel

The current personnel at Altus AFB and the projected increase necessary to support the KC-46A MOB 1 mission are provided in Table 2-7. As part of the MOB 1 mission, the AFRC would have an association with the active-duty component, as described below.

Because the MOB 1 mission at Altus AFB would be in addition to the existing missions, an increase in personnel would be anticipated. The KC-46A MOB 1 mission would require approximately 1,873 full-time military (includes 1,340 active-duty, 305 reserve, and 228 BOS) personnel, approximately 930 part-time reserve personnel, approximately 29 DoD civilian personnel, and approximately 20 contractors (categorized as “other base personnel”).

**Table 2-7. Altus AFB KC-46A MOB 1 Scenario Personnel and Dependent Changes**

Personnel	Baseline	KC-46A MOB 1 Scenario	Total
Military (full-time)	1,379	1,873	3,252
Military Dependents and Family Members	1,051	3,044 <sup>a</sup>	4,095
Part-Time Reservists	19	930	949
Students	362	0	362
DoD Civilian	1,243	29	1,272
Other Base Personnel	907	20	927
<b>Total</b>	<b>4,961</b>	<b>5,896</b>	<b>10,857</b>

<sup>a</sup> Dependents estimated at 2.5 times 65 percent of full-time military personnel only.

About 1,051 military dependents, currently associated with the full-time military personnel at Altus AFB, live in communities surrounding the base. Approximately 3,044 family members and dependents would be anticipated to accompany the full-time military personnel associated with the KC-46A MOB 1 mission. Depending on the availability of housing in areas surrounding Altus AFB, the additional families associated with the KC-46A MOB 1 mission could need about 1,873 homes. These could either be existing houses in the communities surrounding the base or constructed new off base. To ascertain whether the required number of homes is available in the communities around Altus AFB, the USAF would conduct a Housing Requirements and Market Analysis (HRMA). This analysis would be completed if Altus AFB were selected to receive this mission.

### 2.4.1.3.3 Flight Operations

Table 2-8 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A MOB 1 mission at Altus AFB to the existing baseline mission. The table shows that the total annual operations at Altus AFB would increase from 109,459 per year to 143,169, resulting in an approximate 31 percent increase in annual aircraft operations.

**Table 2-8. Altus AFB Baseline and Projected Annual MOB 1 Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual
C-17	240	41.98	10,075	172.78	41,467	214.76	51,542	41.98	10,075	172.78	41,467	214.76	51,542
KC-135	240	16.50	3,960	219.2	52,608	235.70	56,568	16.50	3,960	219.20	52,608	235.70	56,568
Transient <sup>c</sup>	240	2.84	682	2.78	667	5.62	1,349	2.84	682	2.78	667	5.62	1,349
KC-46A <sup>d</sup>	312 <sup>e</sup>	0	0	0	0	0	0	17.60	5,630	90.00	28,080	107.60	33,710
<b>Total<sup>f</sup></b>		<b>61.32</b>	<b>14,717</b>	<b>394.76</b>	<b>94,742</b>	<b>456.08</b>	<b>109,459</b>	<b>78.92</b>	<b>20,347</b>	<b>484.76</b>	<b>122,822</b>	<b>563.68</b>	<b>143,169</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> The primary transient aircraft types using Altus AFB include C-130, C-17, C-21, and T-38.

<sup>d</sup> Approximately 10 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

<sup>e</sup> The annual total represents a combination of operations resulting from local training sorties, which occur 312 days per year, and mission sorties, which occur 365 days per year. The expected 475 mission sorties per year would not normally conduct closed pattern operations, whereas training sorties would conduct an average of approximately six closed patterns per sortie.

<sup>f</sup> The total operations in this table are a combination of all aircraft operations and are based on different numbers of flying days.

### 2.4.1.3.4 Auxiliary Airfields

The proposed MOB 1 mission at Altus AFB would not require the use of auxiliary airfields. The KC-46A aircraft would utilize the existing KC-135 flight tracks, fuel jettison areas, and AR tracks.

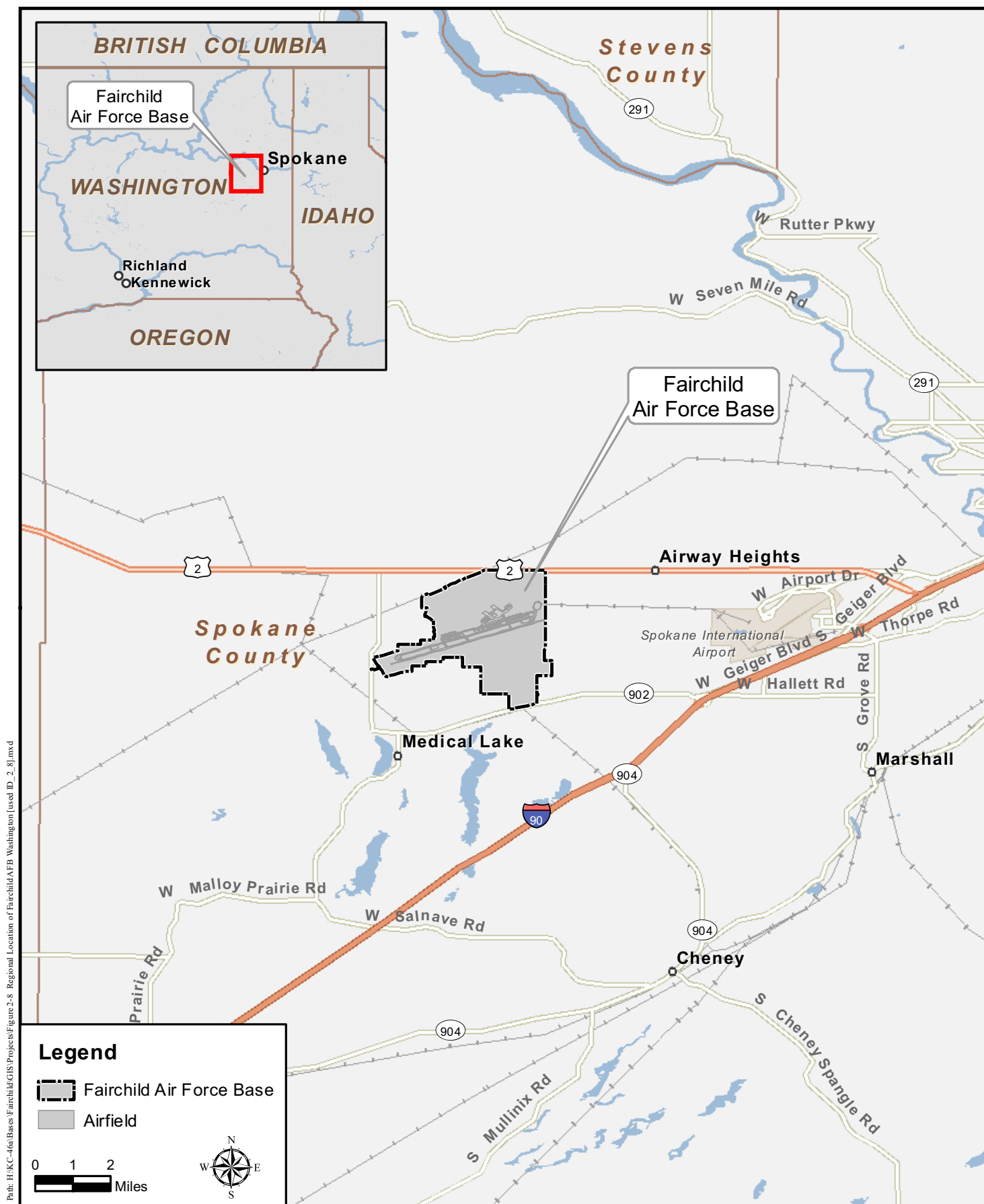
## 2.4.2 Fairchild Air Force Base (MOB 1)

The USAF is considering Fairchild AFB for the MOB 1 mission of 36 KC-46A aircraft. The classic association (active led, ANG supported) would continue if Fairchild AFB is selected for beddown of the MOB 1 mission.

Section 2.4.2.2 describes the personnel changes, physical and development changes, and airfield operations that would occur with implementation of the MOB 1 mission.

### 2.4.2.1 Fairchild AFB Overview

Fairchild AFB is located in Spokane County, Washington approximately 12 miles west of the City of Spokane, Washington (see Figure 2-8). Fairchild AFB hosts one northeast-to-southwest runway that is 13,899 feet long by 200 feet wide, and is one of only three active-duty KC-135 Stratotanker wings in the USAF. The host unit at Fairchild AFB is the 92 ARW assigned to the 18th Air Force (AF) of AMC. The mission of Fairchild AFB is to “Support America’s War Fighters with Global Reach Airpower and Agile Combat Support” and to “Perform air refueling, airlift, and aeromedical evacuation missions supporting U.S. and coalition conventional operations and United States Strategic Command strategic deterrence missions.”



Fairchild AFB covers approximately 4,551 acres of land and is home to a wide variety of units and missions. The most prominent mission is aerial refueling, but others include the USAF Survival, Evasion, Resistance, and Escape (SERE) School, Washington Air National Guard (WANG), AFRC, the Joint Personnel Recovery Agency (JPRA), medical detachments, and others.

Fairchild AFB was activated in March 1942 as the Spokane Army Air Depot. The depot served as a major repair center for World War II aircraft (mostly B-17 Flying Fortresses). Shortly after the conclusion of World War II, two bombardment wings (92nd and 98th Bombardment Wing [BMW]) were assigned to the base. These units flew the B-29 Superfortress. In July 1951, the base's name was changed to Fairchild AFB and the 92 BMW received the B-36 Peacemaker. In October 1957, the base converted to the B-52 Stratofortress and in February 1958, the first KC-135 Stratotanker arrived at Fairchild AFB. In 1960, Fairchild AFB received an Atlas missile launch complex, becoming the first base to have both manned aircraft and intercontinental ballistic missiles. The Atlas mission was deactivated in 1965, but the B-52s continued to fly at Fairchild AFB until 1994. When the B-52s left the base, the 92 BMW was redesignated the 92 ARW. The 92 ARW continues to fly the KC-135.

#### *2.4.2.2 MOB 1 Beddown Specifics*

This section details the actions that would occur at Fairchild AFB if selected to base 36 KC-46A aircraft for the MOB 1 mission. The MOB 1 mission would replace the existing KC-135 aerial refueling mission at Fairchild AFB and result in a net increase of six PAA. However, the SERE, JPRA, and KC-135 Weapons Instructor Course (WIC) missions would continue. The KC-135 WIC function would temporarily move from Building 2040 to Building 399. The WIC function comprises 23 military instructor/administrative personnel and a student throughput of 16 students per year. This function is responsible for 76 airfield annual sorties at Fairchild AFB and would continue regardless of the final KC-46A MOB 1 basing decision.

The USAF determined that Fairchild AFB's infrastructure and base resources could accommodate the basic requirements for a KC-46A MOB 1 mission within the constraints set by the alternative narrowing process described in Section 2.2. The overall layout of existing facilities and infrastructure at Fairchild AFB is shown on Figure 2-9.

##### *2.4.2.2.1 Facilities and Infrastructure*

The overall facility requirements for the MOB 1 beddown are described in Section 2.3.2.1. Most of these requirements are met through existing infrastructure. However, the proposed MOB 1 beddown at Fairchild AFB would require new C&D of facilities, as well as modifications to some existing facilities. The projects anticipated to be required to support the KC-46A MOB 1 mission at Fairchild AFB are listed in Table 2-9. The proposed redevelopment would take place within the previously disturbed cantonment area of Fairchild AFB (see Figure 2-10). The proposed apron and fuels upgrade project would be developed on areas of the flightline that are currently paved and unpaved.

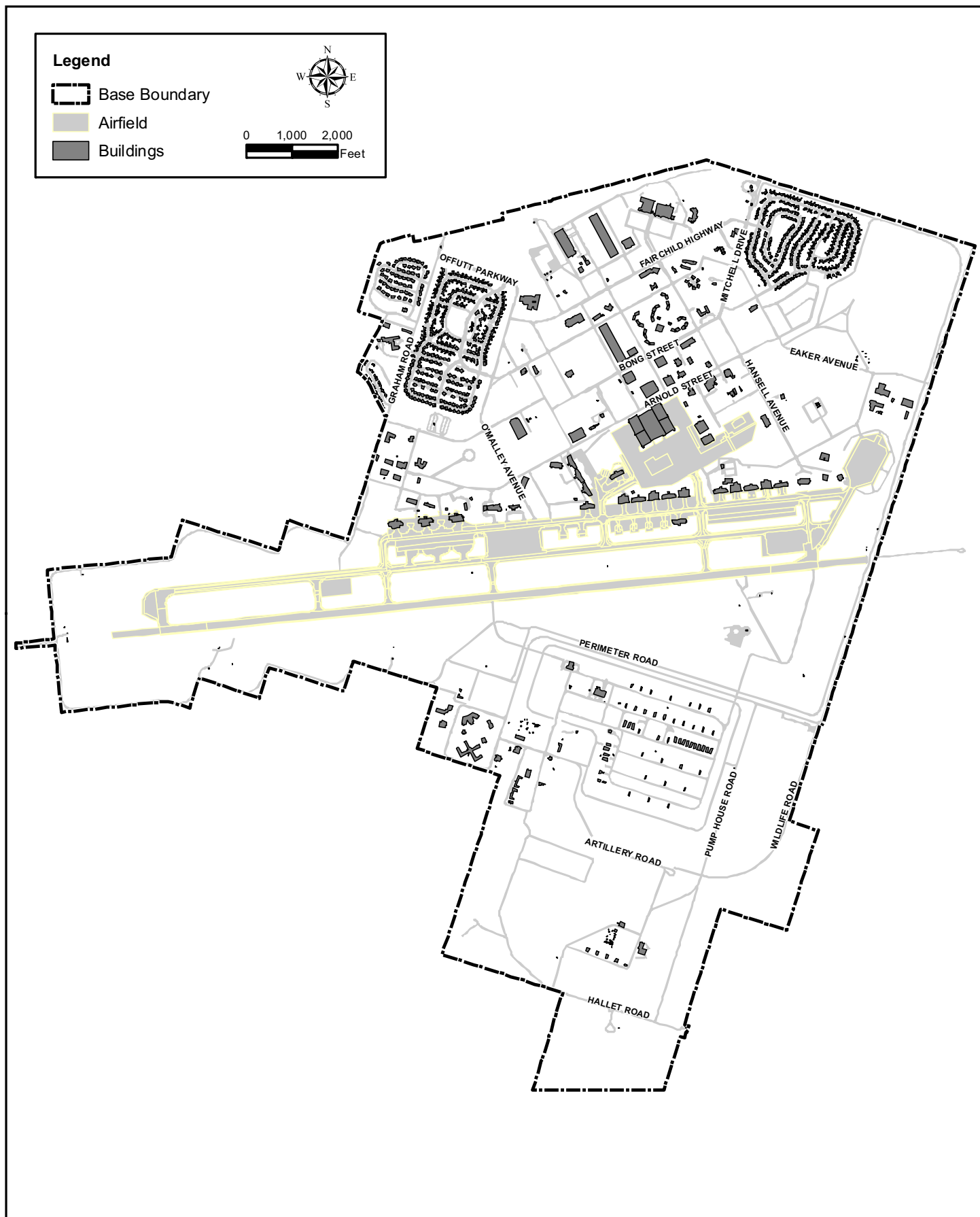


Figure 2-9. Base Overview of Fairchild AFB

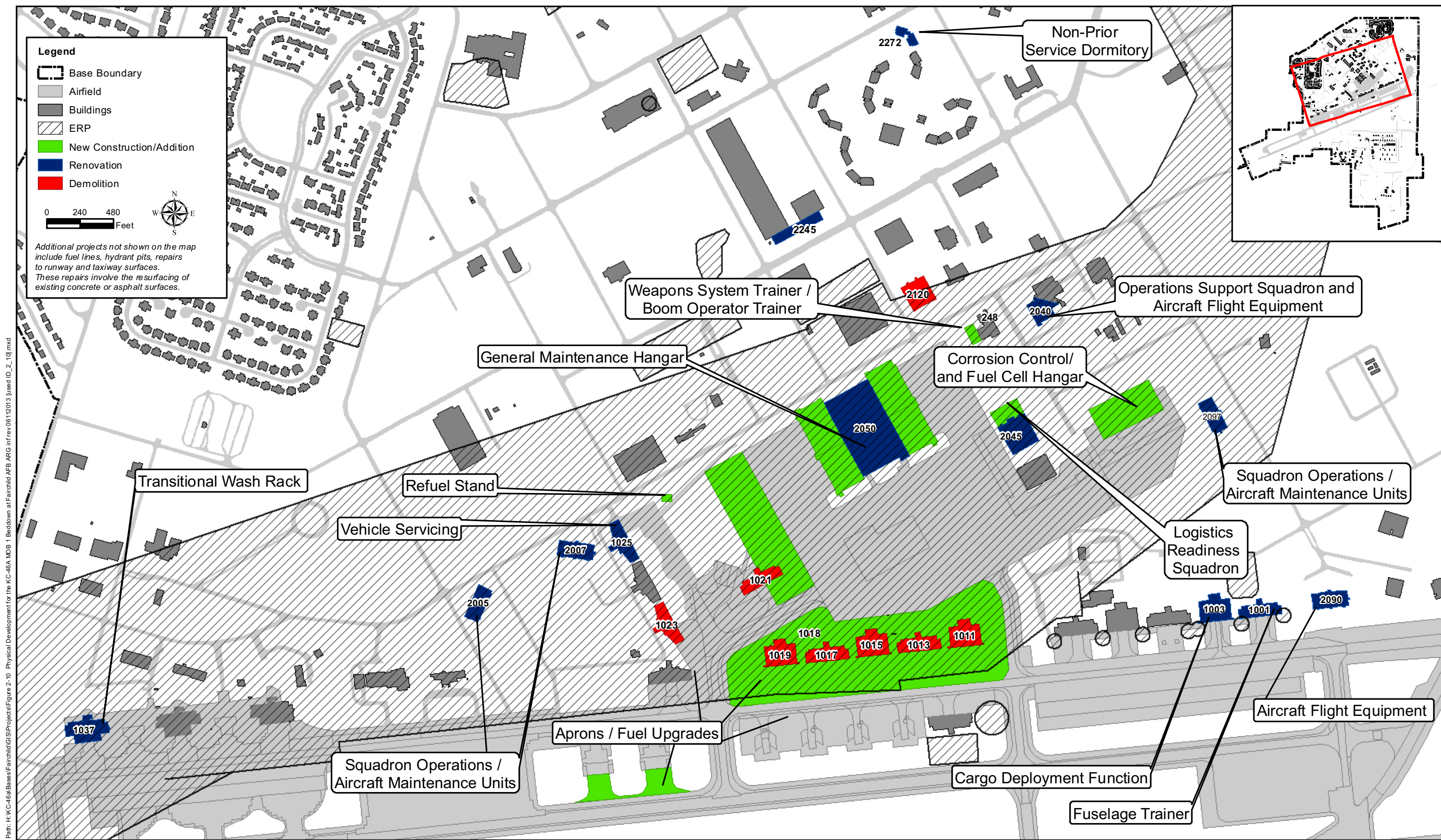


Figure 2-10. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Fairchild AFB

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**Table 2-9. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Fairchild AFB**

<b>Project</b>	<b>Facility Size (Square Feet)</b>
<b>Demolition<sup>a</sup></b>	
Building 1011	32,664
Building 1013	27,747
Building 1015	32,664
Building 1017	27,875
Building 1018	1,881
Building 1019	37,278
Building 2120	28,200
<b>Total Square Feet</b>	<b>188,309</b>
<b>Renovation<sup>b</sup></b>	
Building 1001, FuT	27,749
Building 1003, Cargo Deployment Function	36,664
Building 1025, Vehicle Servicing	26,681
Building 1037, Transitional Wash Rack	39,977
Building 2005, Squad Ops and AMU	38,308
Building 2007, Squad Ops and AMU	38,300
Building 2040, Operations Support Squadron and Aircraft Flight Equipment	15,800
Building 2050, General Maintenance Hangar	474,182
Building 2090, Aircraft Flight Equipment	36,603
Building 2097, Squad Ops and AMU	40,600
Building 2272, Dormitory Conversion	23,755
Building 2245	57,027
Roads and Parking Upgrades	44,882
Repair Taxiways A, B, C, D, E, F, and P (resurfacing of existing pavements)	1,168,788
<b>Total Square Feet</b>	<b>2,068,316</b>
<b>New Construction</b>	
Corrosion Control and Fuel Cell Hangar	145,626
Maintenance Training Facility	44,355
New Aprons and Fuels Upgrade (decommission of old hydrant loop and installation of new)	1,420,056
Fuel Stand (remove former stand and reconstruct)	3,560
<b>Total Square Feet</b>	<b>1,613,597</b>
<b>Additions/Alterations</b>	
Building 2045, Logistics Readiness Squadron	20,000
Building 2048, WSTs, BOT	12,500
<b>Total Square Feet</b>	<b>32,500</b>

<sup>a</sup> Demolition of Buildings 1021 and 1023 are required for new construction. These buildings were evaluated under a previous environmental assessment, are already scheduled for demolition, and would be demolished with or without the KC-46A beddown.

<sup>b</sup> Buildings 1024 and 1026 would be used to house KC-46A personnel, but no renovations are required.

#### 2.4.2.2.2 Personnel

The current personnel at Fairchild AFB and the projected increase necessary to support the KC-46A MOB 1 mission are provided in Table 2-10. Currently, the base has approximately 6,400 personnel, including military, part-time Guardsmen, DoD civilians, and contractors. The ANG would have an association with the active-duty component, as shown in Table 2-10.

The KC-46A MOB 1 mission would require approximately 1,656 full-time military (includes 1,348 active-duty, 288 reserve, and 20 BOS) personnel, approximately 374 part-time Guardsmen, and approximately 20 contractors (categorized as “other base personnel”).

**Table 2-10. Fairchild AFB KC-46A MOB 1 Scenario Personnel and Dependent Changes**

Personnel	Baseline	KC-46A MOB 1 Scenario	KC-135 Drawdown	Change	Total
Military (full-time)	3,334	1,656	-1,239	417	3,751
Military Dependents and Family Members	3,906	2,691 <sup>a</sup>	-2,013 <sup>a</sup>	678	4,584
Part-Time Guardsmen	1,354	374	-339	35	1,389
DoD Civilian	531	25	-24	1	532
Other Base Personnel	621	20	0	20	641
<b>Total</b>	<b>9,746</b>	<b>4,766</b>	<b>-3,615</b>	<b>1,151</b>	<b>10,897</b>

<sup>a</sup> KC-46A and drawdown KC-135 dependents estimated at 2.5 times 65 percent of full-time military personnel only.

About 3,900 military dependents are currently associated with the full-time military personnel at Fairchild AFB. In addition, dependents of the non-military personnel live in the surrounding communities. The projected new military personnel are expected to be accompanied by 2,691 dependents.

#### 2.4.2.2.3 Flight Operations

Table 2-11 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A MOB 1 mission at Fairchild AFB to the existing KC-135 mission. The table shows that the total annual operations at Fairchild AFB would increase from 30,507 per year to 49,303, resulting in an approximate 62 percent increase in annual aircraft operations.

**Table 2-11. Fairchild AFB Baseline and Projected Annual MOB 1 Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual
KC-135 <sup>c</sup>	260	11.34	2,948	46.02	11,965	57.36	14,914	0	0	0	0	0	0
UH-60	260	10.01	2,603	5.54	1,440	15.55	4,043	10.01	2,603	5.54	1,440	15.55	4,043
UH-1N	260	3.17	824	16.80	4,368	19.97	5,192	3.17	824	16.80	4,368	19.97	5,192
Transient <sup>d</sup>	365	5.34	1,949	12.08	4,409	17.42	6,358	5.34	1,949	12.08	4,409	17.42	6,358
KC-46A <sup>e</sup>	312 <sup>f</sup>	0	0	0	0	0	0	17.60	5,630	90.00	28,080	107.60	33,710
<b>Total<sup>g</sup></b>		<b>29.86</b>	<b>8,324</b>	<b>80.44</b>	<b>22,183</b>	<b>110.30</b>	<b>30,507</b>	<b>36.12</b>	<b>11,006</b>	<b>124.42</b>	<b>38,297</b>	<b>160.54</b>	<b>49,303</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver, such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> A minor number of KC-135 sorties associated with the WIC could continue with the implementation of the MOB 1 scenario.

<sup>d</sup> The primary transient aircraft types using Fairchild AFB include C-12, C-130, C-17, C-9, EA-6B, F-16, F-18A/C, KC-135, and P-3C. There is also some use of Fairchild AFB by helicopters and piston aircraft (types unidentified).

<sup>e</sup> Approximately 10 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

<sup>f</sup> The annual total represents a combination of operations resulting from local training sorties, which occur 312 days per year, and mission sorties, which occur 365 days per year. The expected 475 mission sorties per year would not normally conduct closed pattern operations, whereas training sorties would conduct an average of approximately six closed patterns per sortie.

<sup>g</sup> The total operations in this table are a combination of all aircraft operations and are based on different numbers of flying days.

#### 2.4.2.2.4 Auxiliary Airfields

The proposed MOB 1 mission at Fairchild AFB would not require the use of auxiliary airfields but would utilize the existing KC-135 flight tracks, fuel jettison areas, and AR tracks.

### **2.4.3 Grand Forks Air Force Base (MOB 1)**

The USAF is considering Grand Forks AFB for the MOB 1 mission of 36 KC-46A aircraft. Section 2.4.3.2 describes the personnel changes, physical and development changes, and airfield operations associated with implementation of the MOB 1 mission.

#### *2.4.3.1 Grand Forks AFB Overview*

Grand Forks AFB is located in Grand Forks County near the North Dakota-Minnesota border at the junction of Red Lake River and the Red River of the North (see Figure 2-11). The base is north of and adjacent to the City of Emerado and is 15 miles west of the City of Grand Forks. The City of Grand Forks is approximately 75 miles north of Fargo, North Dakota, and approximately 145 miles south of Winnipeg, Manitoba, in Canada. Grand Forks AFB hosts one north-to-south runway that is 12,350 feet long by 150 feet wide. Figure 2-12 shows an overhead view of the base.

The host unit at Grand Forks AFB is the 319th Air Base Wing (ABW) assigned to the Expeditionary Center of AMC. The 319 ABW provides base operating and direct operational support to wing personnel, three tenant units, and nine geographically separated units. Grand Forks AFB trains, deploys, and redeploys more than 1,300 Airmen in support of the Air Expeditionary Force and combatant commander requirements. Tenant groups include the Department of Homeland Security (DHS) operating the MQ-9 Reaper remotely piloted aircraft (RPA), the 69th Reconnaissance Group, and the 372nd Training Squadron.

Grand Forks AFB was established in 1954, when the USAF announced plans to build an Air Defense Command fighter-interceptor base in eastern North Dakota. In 1956, the USAF announced it would also utilize Grand Forks AFB to support SAC bombers and tankers. In 1960, Air Defense Command stationed the F-101 Voodoo fighter-interceptor squadron at Grand Forks AFB, along with the first KC-135 aerial refueling squadron. In 1962, the B-52 Stratofortress bomber arrived at Grand Forks AFB. In the mid-1960s, SAC organized a strategic missile wing at Grand Forks AFB and began construction on a Minuteman II missile complex, which became operational in December 1966. In 1987, the B-52 aircraft were replaced by the newer and more capable B-1B Lancer strategic bomber, while the KC-135A Stratotankers were replaced by the KC-135R models. Heavy bomber operations at Grand Forks AFB ended with the last B-1B Lancer departing the base on 26 May 1994. The 2005 Base Realignment and Closure (BRAC) directed the realignment of all KC-135 aircraft to other AFBs, and, in 2010, the last KC-135 aircraft departed Grand Forks AFB. This final KC-135 flight marked the end of 50 years of aerial refueling operations at the base and the culmination of 53 years of flying operations. In early 2009, the DHS's Customs and Border Protection became a tenant organization at Grand Forks AFB and brought its RPA program to the base. In late December 2010, ACC initiated RQ-4 Global Hawk operations and the 119 ABW initiated MQ-1 Predator operations in fulfillment of the 2005 BRAC recommendation for future operations at Grand Forks AFB. The first Global Hawk RPA arrived at Grand Forks AFB in June 2011.

#### *2.4.3.2 MOB 1 Beddown Specifics*

This section details the actions necessary at Grand Forks AFB if selected for the basing of the KC-46A MOB 1 mission. The MOB 1 mission would be in addition to the three existing RPA missions at Grand Forks AFB. The USAF determined that Grand Forks AFB's infrastructure and base resources could accommodate the basic requirements for a KC-46A MOB 1 mission within the constraints set by the alternative narrowing process described in Section 2.2.

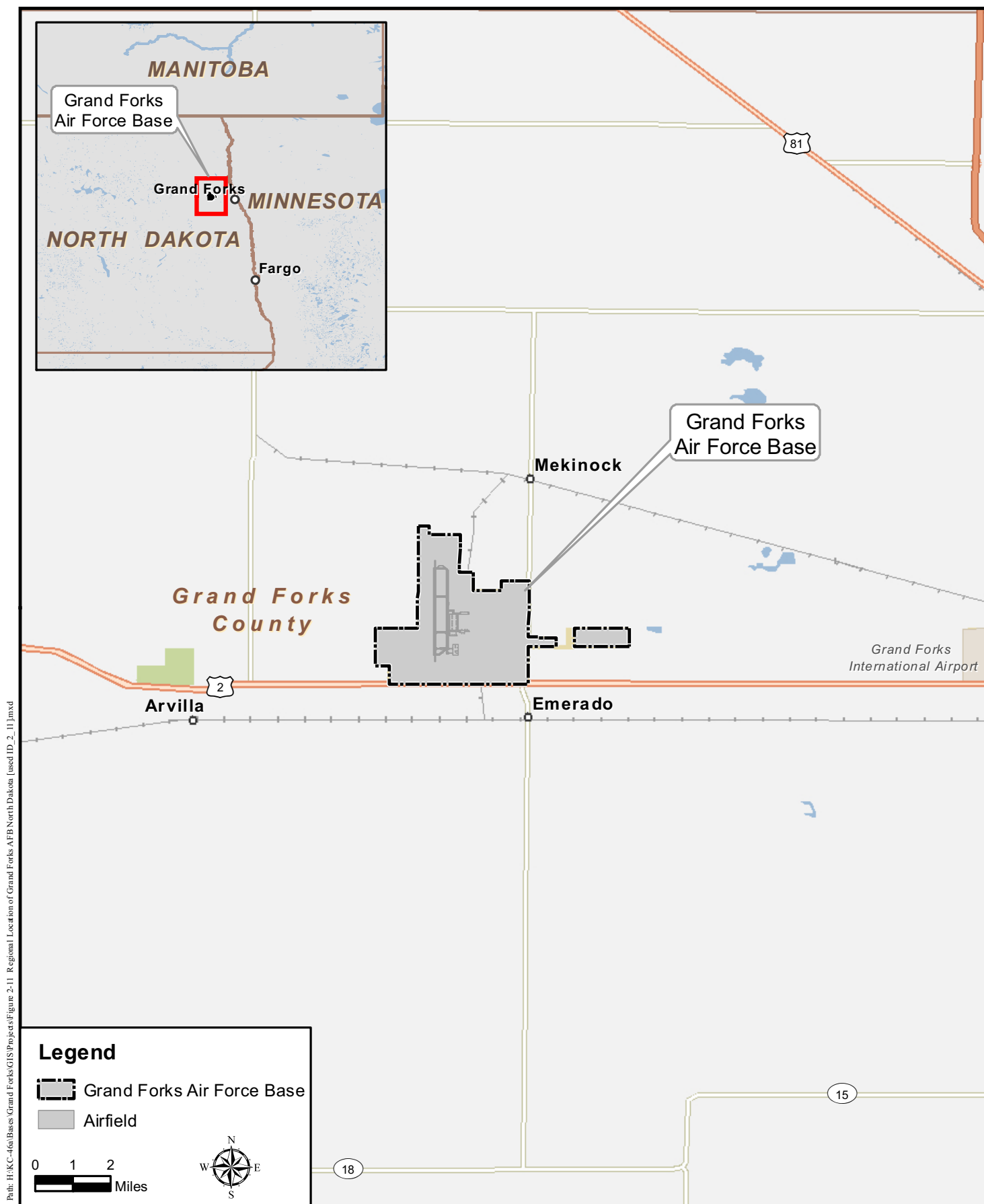


Figure 2-11. Regional Location of Grand Forks AFB, North Dakota

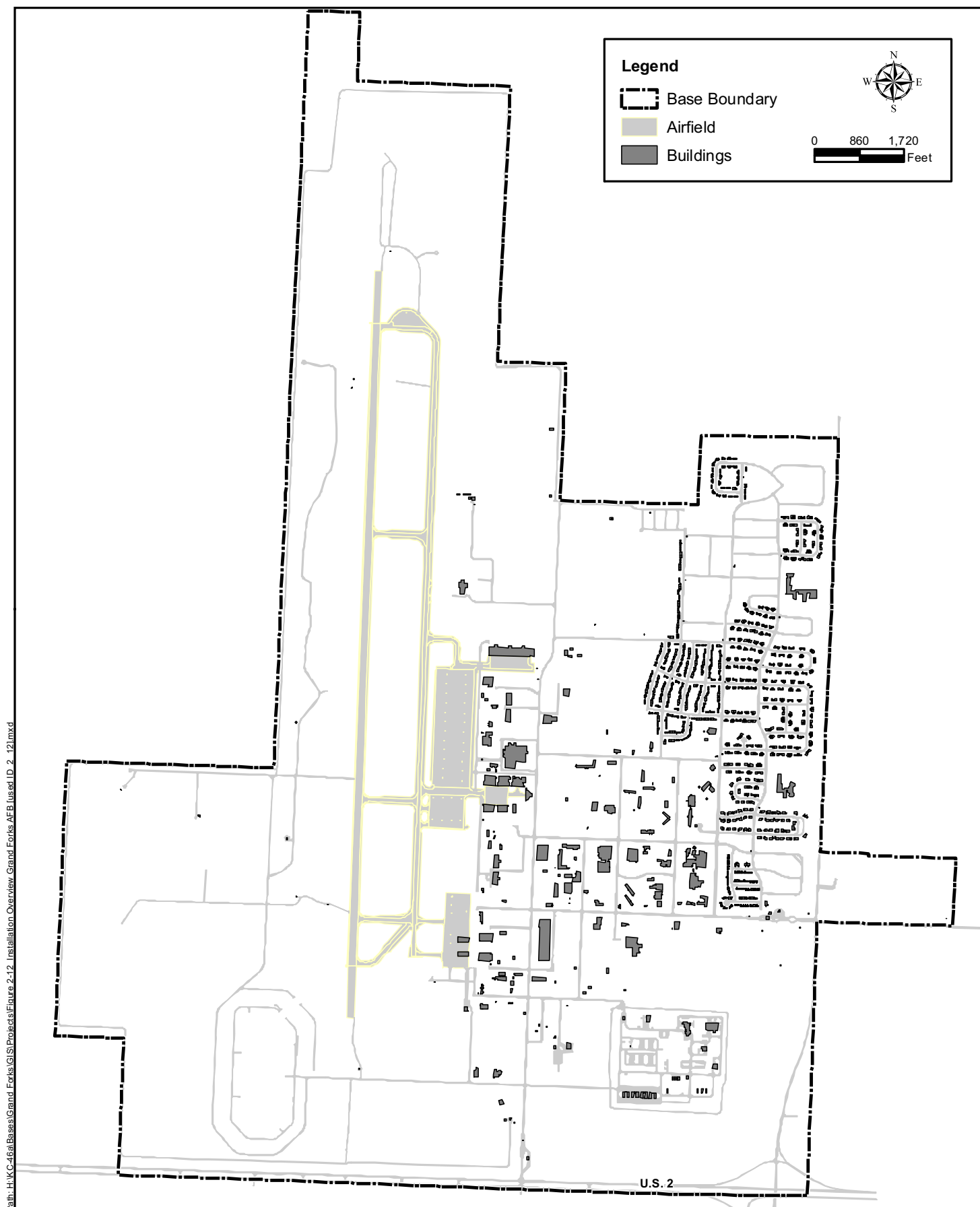


Figure 2-12. Base Overview of Grand Forks AFB

## 2.4.3.2.1 Facilities and Infrastructure

The overall facility requirements for the MOB 1 beddown are described in Section 2.3.2.1. Grand Forks AFB has the physical real estate and infrastructure to beddown the KC-46A MOB 1 scenario; however, some of the anticipated projects required to support the KC-46A MOB 1 scenario at Grand Forks AFB are listed in Table 2-12. Some of the existing facilities, airfield ramp space, and hangars are currently utilized for day-to-day RPA missions. Due to ongoing base operations and the KC-46A aircraft mission requirements, new construction, additions, and renovations would be required to beddown the KC-46A (see Figure 2-13).

**Table 2-12. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Grand Forks AFB**

Project	Project Size (Square Feet)
<b>Demolition</b>	
Building 531	3,731
Building 635 <sup>a</sup>	6,106
<b>Total Square Feet</b>	<b>9,837</b>
<b>Renovation</b>	
Building 221, Dormitory	26,265
Building 307, ANG Wing Headquarters	2,100
Building 528, Base Operations	2,100
Building 602, RPA Wing	27,172
Building 607, Operation Group/Operations Support Squadron/Aircraft Maintenance Squadron	37,286
Building 629, Squad Ops/AMU	3,359
Building 631, Squad Ops/AMU	3,359
Building 670, Supply Shop	N/A - Renovations consist of the installation of a cage for segregated storage.
Runway and Overrun Repairs	18,829,628
Roads and Parking Upgrades	Undetermined
Parking Apron/Fuels Hydrant Upgrade	830,184
Taxiway A, F, G Renovations	596,978
<b>Total Square Feet</b>	<b>20,358,431</b>
<b>Additions/Alterations</b>	
Building 556, Flight Stimulator (WSTs, BOT)	32,475
Building 622, Composite Shop	8,500
Building 649, General Maintenance Hangar (3-bay)/AME	334,644
Building 661, AGE	28,000
<b>Total Square Feet</b>	<b>403,619</b>
<b>New Construction</b>	
Fuel Cell/Corrosion Control (2-bay)/General Maintenance Hangar (1-bay) with Apron	216,225
New Taxiway and Parking Apron	542,750
Global Hawk Engine Pad (required for displaced Global Hawk)	38,695
Maintenance Training Facility	47,300
Squad Ops/AMU	40,600
AFE Facility	18,000
Dormitory	33,318
FuT Facility	10,600
Airfield Lighting Vault	4,787
<b>Total Square Feet</b>	<b>952,275</b>

<sup>a</sup> Demolish building to construct new AGE.

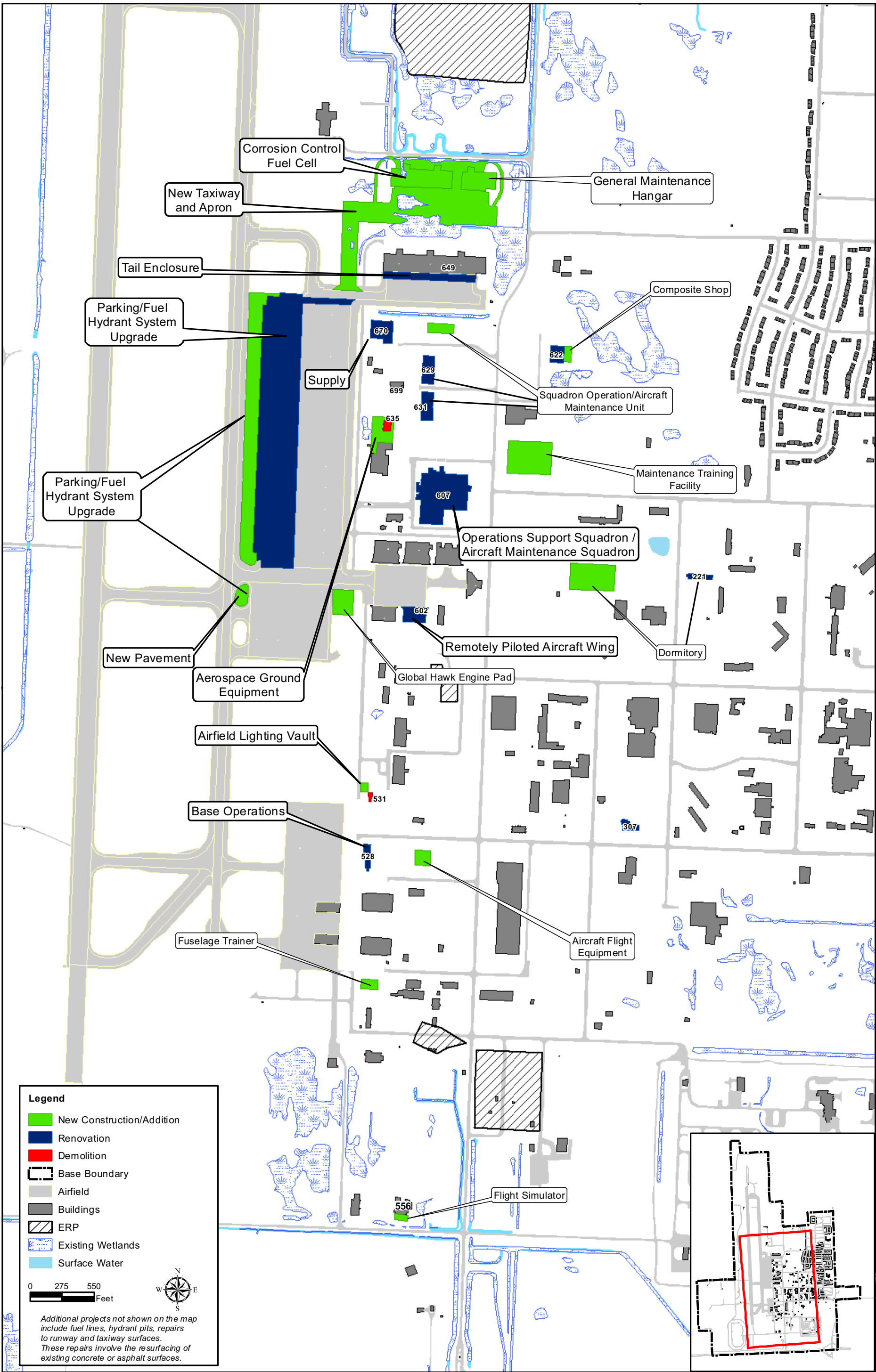


Figure 2-13. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at Grand Forks AFB

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New construction would include a Fuel Cell/Corrosion Control/General Maintenance Hangar; an MTF; an FuT facility; an AFE facility; a new Global Hawk Engine Pad to support the displacement by KC-46A parking; and adequate ramp, taxiway and fuel hydrant systems, as well as repairs required to the taxiways and runway (see Figure 2-13). The proposed redevelopment would take place within the previously disturbed cantonment area of the base.

Existing RPA flight operations and missions would need to continue during demolition and reconstruction activities. A construction transition plan would be implemented, where the taxiway demolition and construction would be phased to not interfere with existing airfield operations.

#### 2.4.3.2.2 Personnel

The current personnel at Grand Forks AFB and the projected increase necessary to support the KC-46A MOB 1 mission are provided in Table 2-13. Currently, the base has about 2,500 personnel, including military, government civilians, and contractors. The ANG would have an association with the active-duty component, as indicated in Table 2-13.

**Table 2-13. Grand Forks AFB KC-46A MOB 1 Scenario Personnel and Dependent Changes**

Personnel	Baseline	KC-46A MOB 1 Scenario	Total
Military (full-time)	1,531	1,724	3,255
Military Dependents and Family Members	1,614	2,802 <sup>a</sup>	4,416
Part-Time Guardsmen	0	659	659
DoD Civilian	303	3	306
Other Base Personnel	679	20	699
<b>Total</b>	<b>4,127</b>	<b>5,208</b>	<b>9,335</b>

<sup>a</sup> Dependents estimated at 2.5 times 65 percent of full-time military personnel only.

Because the MOB 1 mission at Grand Forks AFB would be in addition to the existing missions, an increase in personnel would be anticipated. The KC-46A MOB 1 mission would require approximately 1,724 full-time military (includes 1,334 active-duty, 288 reserve, and 102 BOS) personnel, approximately 659 part-time Guardsmen, approximately three DoD civilian personnel, and approximately 20 contractors (categorized as “other base personnel”).

About 1,614 military dependents currently associated with the full-time military personnel at Grand Forks AFB live in communities surrounding Grand Forks AFB. Approximately 2,802 dependents and family members would be anticipated to accompany the full-time military personnel associated with the KC-46A MOB 1 mission.

Depending on the availability of housing in areas surrounding Grand Forks AFB, the additional families associated with the KC-46A MOB 1 mission could need additional homes. These could either be existing houses in the communities surrounding the base or constructed new on or off base. In order to understand if these homes are available in the communities around Grand Forks AFB, the USAF would conduct an HRMA. This analysis would be completed if Grand Forks AFB were selected to receive this mission.

#### 2.4.3.2.3 Flight Operations

Table 2-14 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A MOB 1 mission at Grand Forks AFB to the existing baseline mission. The table shows that the total annual operations at Grand Forks AFB would increase from 14,946 per year to 48,656, resulting in an approximate 226 percent increase in annual aircraft operations.

**Table 2-14. Grand Forks AFB Baseline and Projected Annual MOB 1 Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual
Predator (MQ-1)	156	2.00	312	28.00	4,368	30.00	4,680	2.00	312	28.00	4,368	30.00	4,680
Reaper (MQ-9)	260	2.00	520	35.00	9,100	37.00	9,620	2.00	520	35.00	9,100	37.00	9,620
Global Hawk (RQ-4)	130	2.00	260	1.00	130	3.00	390	2.00	260	1.00	130	3.00	390
Transient <sup>c</sup>	365	0.70	256	0.00	0	0.70	256	0.70	256	0.00	0	0.70	256
KC-46A <sup>d</sup>	312 <sup>e</sup>	0.00	0	0.00	0	0.00	0	17.60	5,630	90.00	28,080	107.60	33,710
<b>Total<sup>f</sup></b>		<b>6.70</b>	<b>1,348</b>	<b>64.00</b>	<b>13,598</b>	<b>70.70</b>	<b>14,946</b>	<b>24.30</b>	<b>6,978</b>	<b>154.00</b>	<b>41,678</b>	<b>178.30</b>	<b>48,656</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver, such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> The primary transient military aircraft types using Grand Forks AFB include KC-135, C-20, C-21, C-130, KC-10, and C-12.

<sup>d</sup> Approximately 10 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

<sup>e</sup> The annual total represents a combination of operations resulting from local training sorties, which occur 312 days per year, and mission sorties, which occur 365 days per year. The expected 475 mission sorties per year would not normally conduct closed pattern operations, whereas training sorties would conduct an average of approximately six closed patterns per sortie.

<sup>f</sup> The total operations in this table are a combination of all aircraft operations and are based on different numbers of flying days.

**Key:** CBP – U.S. Customs and Border Protection

#### 2.4.3.2.4 Auxiliary Airfields

The proposed MOB 1 mission at Grand Forks AFB would not require the use of auxiliary airfields but would utilize the former KC-135 flight tracks, fuel jettison areas, and AR tracks.

### 2.4.4 McConnell Air Force Base (FTU or MOB 1)

The USAF is considering two different actions for McConnell AFB. One action includes the beddown of one FTU squadron by AETC with up to eight KC-46A aircraft. A second action, for which McConnell AFB has been selected as the Preferred Alternative, would be the beddown of three squadrons by AMC with 36 KC-46A aircraft for the MOB 1 scenario. These are separate actions; McConnell AFB would only be selected for the implementation of one of these actions (as described in Chapter 1). The classic association (active led, AFRC supported) would continue if McConnell AFB is selected for beddown of the KC-46A FTU or MOB 1 scenario.

Section 2.4.4.2 describes the personnel changes, physical and development changes, airfield operations, and changes in use of auxiliary airfields that would occur with implementation of the FTU scenario. Section 2.4.4.3 describes changes that would occur with implementation of the MOB 1 scenario. No auxiliary airfields would be used as part of the MOB 1 scenario.

#### 2.4.4.1 McConnell AFB Overview

McConnell AFB is located in Sedgwick County, Kansas, approximately six miles southeast of Wichita, Kansas (see Figure 2-14). The host unit at McConnell AFB is the 22nd ARW assigned to the 18 AF of AMC. The mission of the 22 ARW is to deliver total force mission ready Airmen and KC-135 Stratotanker mobility to combatant commanders through robust installation support anytime and anywhere. In addition to the 22 ARW, McConnell AFB is home to the Kansas Air National Guard (KANG). McConnell AFB covers approximately 2,651 acres of land and is one of only three active-duty KC-135 Stratotanker wings in the USAF.

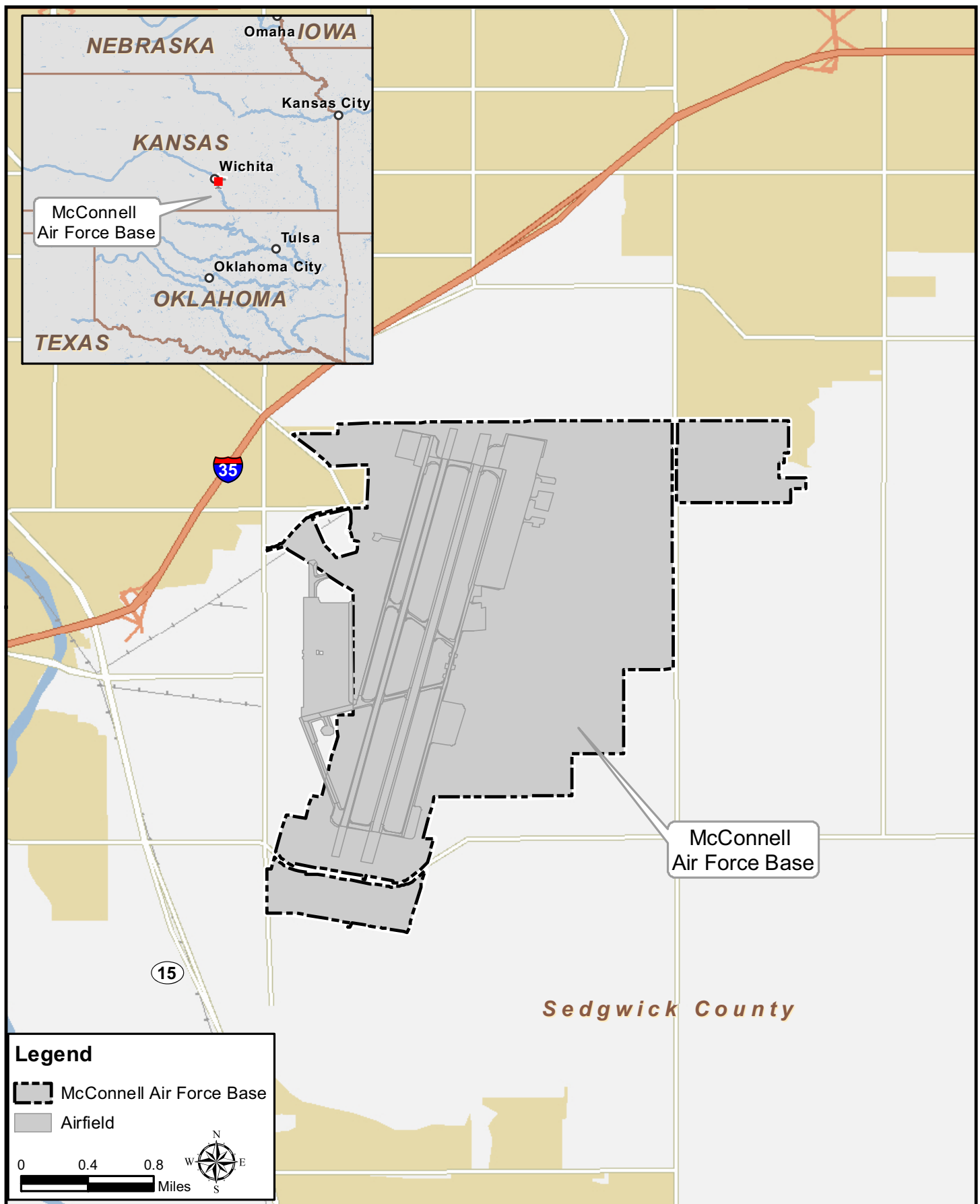


Figure 2-14. Regional Location of McConnell AFB, Kansas

The other two KC-135 Stratotanker wings are located at Fairchild AFB in Washington and MacDill AFB in Florida. McConnell AFB hosts two northeast-to-southwest runways. The primary runway (01L/19R) is under reconstruction and will be 12,000 feet long by 150 feet wide. The second runway is 12,000 feet long by 300 feet wide. The base overview of McConnell AFB is shown on Figure 2-15.

McConnell AFB originated with joint municipal-military use of Wichita Municipal Airport in the 1940s. The 127th Observation Squadron of Kansas National Guard was activated in 1941 as the first military unit. The USAF named the airport Wichita AFB in 1951, and later renamed it McConnell AFB in 1954. McConnell AFB has served as home for a variety of missions over the years, including the B-47 Stratojet bomber, the Titan missile mission, F-16, and the B-1 bomber. The B-1 aircraft were transferred to other bases in 2002. As a result of this transfer, the 184th Bomb Wing was redesignated as the 184 ARW. This officially established McConnell AFB as the sole base in the USAF where all three components (Active, Guard, and Reserve) supported the same mission. In April 2008, the 184 ARW was designated the 184 IW, making it the first IW in the ANG (McConnell AFB 2011a).

The McConnell AFB PAA consists of 44 KC-135 aircraft. The final budget for fiscal year 2013 downsized the PAA at McConnell AFB from 48 to 44 aircraft. Currently, there is a classic association (active led, AFRC supported) within the existing KC-135 squadrons at McConnell AFB. The 22 ARW includes four major units: the 22nd Maintenance Group, the 22nd Medical Group, the 22nd Mission Support Group, and the 22nd Operations Group. The 931st Air Refueling Group (ARG) of the AFRC is an associate unit and the 184 IW of the KANG is a tenant unit. In addition, the 22 ARW provides administrative, medical, and logistical support for other tenant agencies and the McConnell AFB community.

#### *2.4.4.2 FTU Beddown Specifics*

The USAF determined that McConnell AFB's infrastructure and base resources could accommodate the basic requirements for the KC-46A FTU scenario within the constraints set by the alternative narrowing process described in Section 2.2. This section details the actions that would occur at McConnell AFB if the base were selected for the basing of the KC-46A FTU scenario. The FTU scenario would be additive to the current mission at McConnell AFB, and the first four of up to eight aircraft would arrive in 2016.

##### *2.4.4.2.1 Facilities and Infrastructure*

The overall facility requirements for the FTU beddown are described in Section 2.3.1.1. Although some of the requirements are met through existing infrastructure, some demolition, construction, and modification/additions to existing facilities, and infrastructure modifications would be required to support KC-46A FTU training operations. Table 2-15 lists the KC-46A FTU-related projects that would take place within the previously disturbed cantonment area, as shown on Figure 2-16.

Existing flight operations and refueling activities associated with the KC-135 mission would continue during demolition and reconstruction activities. A construction transition plan would be implemented, where the taxiway demolition and construction would be phased to not interfere with existing airfield operations. During demolition and construction of the new hydrant systems, additional refueling vehicles would be used to maintain the KC-135 mission.

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*Final*
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*March 2014*

**Table 2-15. Facilities and Infrastructure Projects for the KC-46A FTU Scenario at McConnell AFB**

<b>Project</b>	<b>Facility Size (Square Feet)</b>
<b>Demolition</b>	
Building 977 <sup>a</sup>	1,891
Building 978 <sup>a</sup>	25,388
Building 984 <sup>a</sup>	655
Building 985 <sup>a</sup>	400
Building 1110 <sup>b</sup>	7,144
Building 1122 <sup>b</sup>	168
<b>Total Square Feet</b>	<b>35,646</b>
<b>Renovation</b>	
Airfield/Runway Taxiway D Repair <sup>d</sup>	125,676
Parking Ramp Apron Type III Fuel Hydrant System Upgrade	N/A
Building 840, (Squad Ops) and AFE <sup>c</sup>	24,700
Building 1169, Logistics Readiness Squadron Facility (storage only)	N/A
<b>Total Square Feet</b>	<b>152,686</b>
<b>New Construction</b>	
Fuel Cell and Corrosion Control Maintenance Hangar (2-bay) AMU /Maintenance Back Shops	145,626
FuT Facility	45,690
FTC	51,352
<b>Total Square Feet</b>	<b>242,668</b>
<b>Additions/Alterations</b>	
Building 1129, Composite Repair Facility (back shops)	8,500
Building 1170, Director of Maintenance Office	560
Alpha Ramp Deicing Pad Expansions and Supporting Infrastructure	49,900
<b>Total Square Feet</b>	<b>58,960</b>

<sup>a</sup> Demolition of building is required to locate the new KC-46A hangar.

<sup>b</sup> Demolition of building is required to locate the new FuT Facility. Demolition analyzed under previous Categorical Exclusion.

<sup>c</sup> AFE would also be housed in Buildings 1183 and 1186.

<sup>d</sup> Taxiway F also requires repairs; however, this project was addressed in the 2012 Installation Development Environmental Assessment.

#### 2.4.4.2.2 Personnel

The current personnel at McConnell AFB and the projected increase necessary to support the KC-46A FTU mission are provided in Table 2-16. Not counting personnel from the KANG 184 IW or from the 931 ARG, the base has about 4,800 personnel, including military, part-time reserve, government civilians, and contractors. The ADSL proposed for the KC-46A FTU would be 200. Because the FTU mission at McConnell AFB would be in addition to the existing mission, an increase in personnel would be anticipated. The KC-46A FTU mission would require approximately 141 full-time military (includes 119 active-duty, 12 reserve, and 10 BOS) personnel, approximately 20 part-time reserve personnel, approximately 315 DoD civilian personnel, and approximately 23 contractors (categorized as “other base personnel”).

About 3,220 military dependents, currently associated with the full-time military personnel at McConnell AFB, live in communities surrounding the base. Approximately 229 family members and dependents would be anticipated to accompany the full-time military personnel associated with the KC-46A FTU mission.

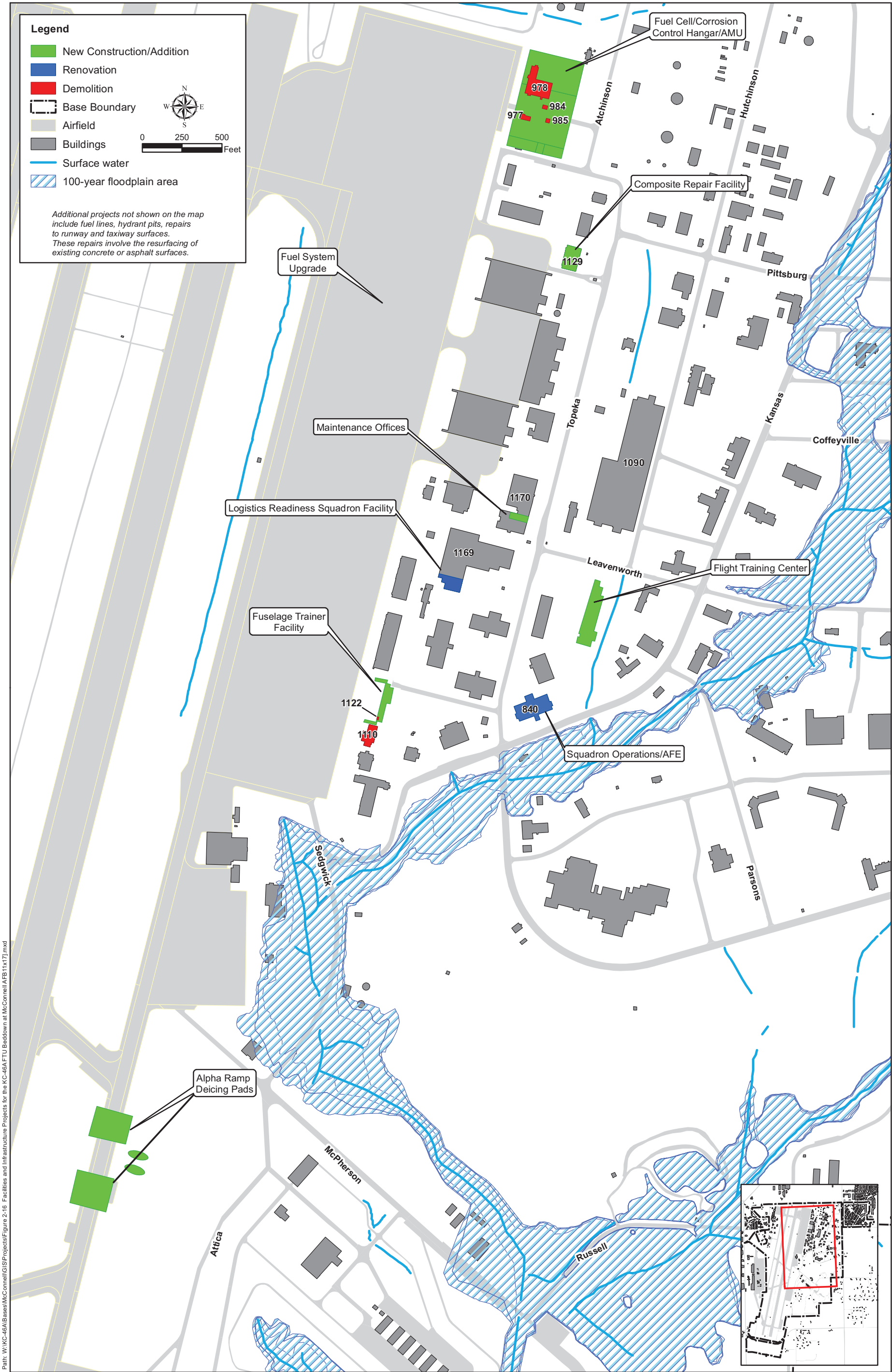


Figure 2-16. Facilities and Infrastructure Projects for the KC-46A FTU Scenario at McConnell AFB

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**Table 2-16. McConnell AFB KC-46A FTU Scenario Personnel and Dependent Changes**

Personnel	Baseline <sup>a</sup>	KC-46A FTU Scenario	Total
Military (full-time)	3,408	141	3,549
Military Dependents and Family Members	3,220	229 <sup>c</sup>	3,449
Part-Time Reservist	460	20	480
Students	0	200	200
DoD Civilian	427	315	742
Other Base Personnel	523	23	546
<b>Total</b>	<b>8,038<sup>b</sup></b>	<b>928</b>	<b>8,966</b>

<sup>a</sup> Source of baseline information: McConnell AFB 2012.

<sup>b</sup> Baseline does not include personnel numbers from the ANG 184 IW.

<sup>c</sup> Dependents estimated at 2.5 times 65 percent of full-time military personnel only.

#### 2.4.4.2.3 Flight Operations

Table 2-17 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A FTU mission at McConnell AFB to the existing baseline mission. The table shows that the total annual operations at McConnell AFB would increase from 38,618 per year to 79,982, resulting in an approximate 107 percent increase in annual aircraft operations.

**Table 2-17. McConnell AFB Baseline and Projected Annual FTU Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual
KC-135	260	21.31	5,541	73.00	18,980	94.31	24,521	21.31	5,541	73.00	18,980	94.31	24,521
Transient <sup>c</sup>	260	21.83	5,676	21.83	5,676	43.66	11,352	21.83	5,676	21.83	5,676	43.66	11,352
Civilian <sup>d</sup>	365	7.52	2,745	0	0	7.52	2,745	7.52	2,745	0	0	7.52	2,745
KC-46A <sup>e</sup>	240	0	0	0	0	0	0	15.22	3,653	157.13	37,711	172.35	41,364
<b>Total</b>		<b>50.66</b>	<b>13,962</b>	<b>94.83</b>	<b>24,656</b>	<b>145.49</b>	<b>38,618</b>	<b>65.88</b>	<b>17,615</b>	<b>251.96</b>	<b>62,367</b>	<b>317.84</b>	<b>79,982</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> The primary transient military aircraft types using McConnell AFB include KC-135, F-16, T-1, and T-38 (HQ AMC 2012).

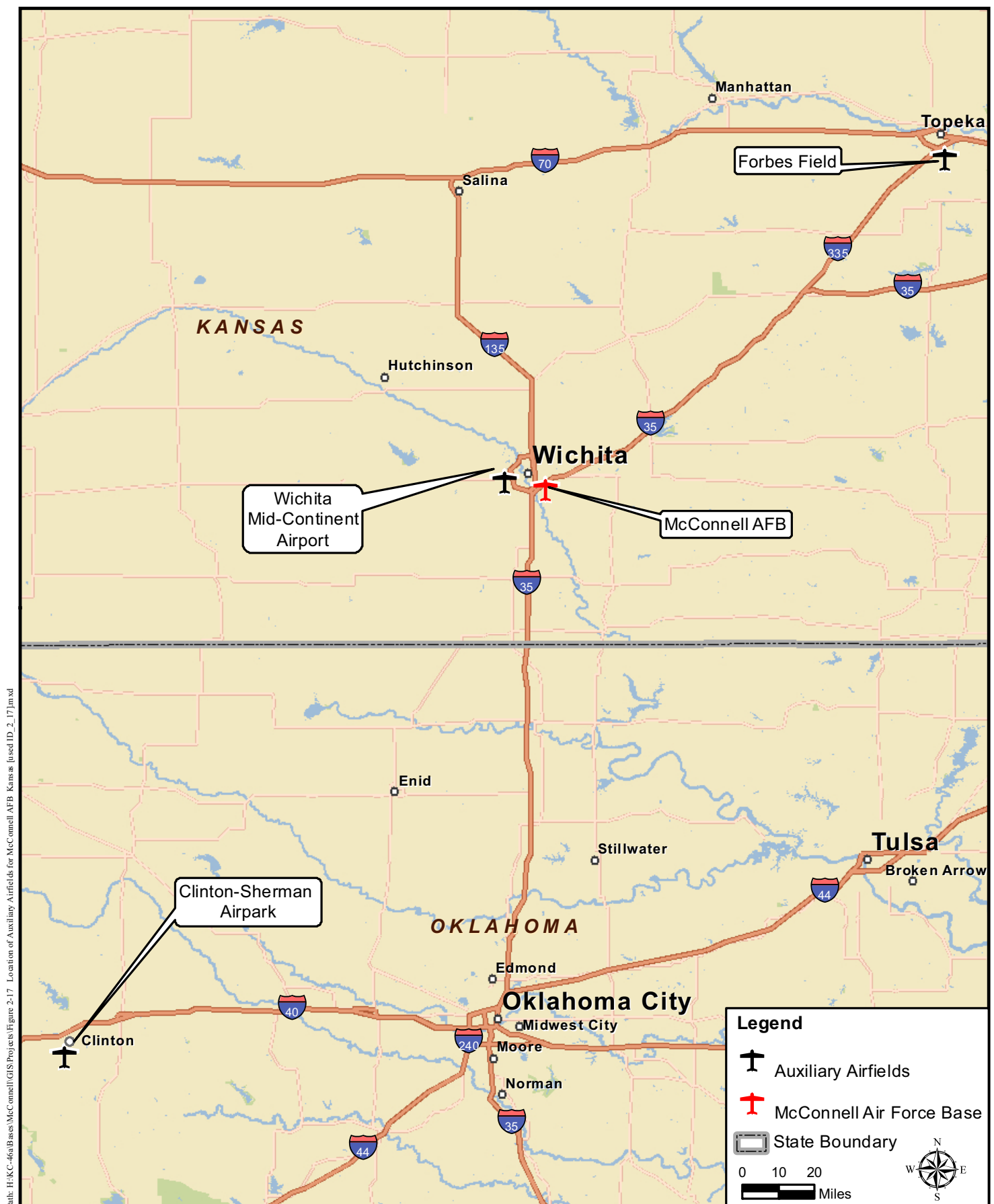
<sup>d</sup> Because the Boeing Corporation and Cessna Corporation manufacturing facilities are adjacent to McConnell AFB, Boeing and Cessna aircraft compose the civilian aircraft that use McConnell AFB. The primary transient civilian aircraft types are Boeing 747 and 767 and Cessna 441.

<sup>e</sup> Approximately 20 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

#### 2.4.4.2.4 Auxiliary Airfields

A variation to the typical training sortie described above could involve performing closed patterns at an auxiliary airfield. As part of the FTU mission at McConnell AFB, KC-46A aircraft would use CSM, Forbes Field (FOE), and Wichita Mid-Continent Airport (ICT) airfields, all three of which are currently being used by KC-135 aircrews. The KC-46A aircraft would use the same AR tracks and fuel jettison areas used by the existing KC-135 mission. KC-46A aircrews associated with the FTU would fly a combined estimate of 6,516 annual aircraft operations at the auxiliary airfields. The location of these airfields relative to McConnell AFB is shown on Figure 2-17. Details regarding the auxiliary airfields are described as follows.

**Clinton-Sherman Industrial Airpark (CSM).** CSM is proposed to be used as an auxiliary airfield for the FTU proposed for Altus AFB and is described in Section 2.4.1.2.4



Path: H:\KC-46a\Bases\McConnell\GIS\Projects\Figure 2-17 Location of Auxiliary Airfields for McConnell AFB Kansas [used ID\_2\_17].mxd

**Figure 2-17. Location of Auxiliary Airfields for the KC-46A FTU Scenario at McConnell AFB, Kansas**

**Forbes Field (FOE).** FOE is the former Forbes AFB and is currently a joint-use civil-military airport operated by the Metropolitan Topeka Airport Authority. FOE encompasses approximately 2,854 acres and is located approximately six miles south of Topeka, in Shawnee County, Kansas. It is both an active municipal airport and a KANG base. FOE has two concrete runways: 13/31, measuring 12,802 feet, and 3/21, measuring 7,000 feet. There are currently 24,742 annual operations at FOE. Of this total, approximately 70 percent are military aircraft operations (primarily based KC-135 and H-60 aircraft).

**Wichita Mid-Continent Airport (ICT).** ICT is a commercial airport located in southwest Wichita, in Sedgwick County, Kansas, and is operated by the Wichita Airport Authority. ICT is located approximately 7 miles from downtown Wichita. ICT encompasses approximately 3,248 acres and is the busiest airport in the state of Kansas. ICT contains three concrete runways, the longest of which (1L/19R) is 10,301 feet. Runway 1R/19L is 7,301 feet, and Runway 14/32 is 6,301 feet long. In total, 165,035 aircraft operations are flown per year at ICT. About half of these operations are general aviation, with the remainder being made up in approximately equal parts of transient military and air carrier/taxi operations.

#### *2.4.4.3 MOB 1 Beddown Specifics*

This section details the actions necessary at McConnell AFB if selected for the basing of a KC-46A MOB 1 mission. Implementation of the MOB 1 scenario would replace the existing 44 KC-135 aircraft with 36 PAA KC-46A aircraft. The USAF determined that McConnell AFB's infrastructure and base resources could accommodate the basic requirements for a KC-46A MOB 1 mission within the constraints set by the alternative narrowing process described in Section 2.2.

##### *2.4.4.3.1 Facilities and Infrastructure*

The overall facility requirements for the MOB 1 beddown are described in Section 2.3.2. The projects anticipated to be required to support the KC-46A MOB 1 mission at McConnell AFB are listed in Table 2-18. Although some of these requirements are met through existing infrastructure and facilities on McConnell AFB, substantial new construction, renovation, and demolition would be required. However, some demolition/construction and modification/additions to existing facilities and infrastructure would be required at McConnell AFB to support the KC-46A MOB 1 mission. New facilities for the FuT, mobility bag storage, and maintenance training would need to be constructed. A series of additions/alterations and renovations to existing facilities would also be needed to accommodate the KC-46A MOB 1 scenario. The proposed redevelopment would take place within the previously disturbed cantonment area of the base (see Figure 2-18).

Existing flight operations and maintenance (O&M), refueling activities, and other functions associated with the KC-135 mission would need to continue during demolition and reconstruction activities. Certain existing KC-135 functions located in Building 1106 would be temporarily relocated to Buildings 1176, 1171, and 1166. The majority of this renovation would occur inside these existing buildings and would involve moving maintenance and testing equipment, completing utility connections, internally routing data and voice communications lines for temporary office space, and installing a mezzanine storage and shelving system from Building 1108 into Building 1107. The only external portion of this work would involve locating an external heating, ventilation and air conditioning (HVAC) unit within the five foot line of Building 1176. A construction transition plan would also be implemented to ensure all KC-46A construction activities and relocation of KC-135 functions to other facilities would be phased so the KC-135 mission is not adversely impacted as the KC-46A mission is phased in. Taxiway demolition and construction would be phased to not interfere with existing airfield operations.

During demolition and construction of the new hydrant systems, additional refueling vehicles would be used to maintain the KC-135 missions.

**Table 2-18. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at McConnell AFB**

Project	Project Size (Square Feet)
<b>Demolition</b>	
Building 973 <sup>a</sup>	352
Building 977 <sup>a</sup>	1,891
Building 978 <sup>a</sup>	25,388
Building 984 <sup>a</sup>	655
Building 985 <sup>a</sup>	400
Building 1101 <sup>a</sup>	273
Building 1102 <sup>a</sup>	6,500
Building 1106 <sup>a</sup>	101,690
Building 1110 <sup>b</sup>	7,144
Building 1122 <sup>b</sup>	168
<b>Total Square Feet</b>	<b>144,461</b>
<b>Renovation</b>	
Building 1108, Air Transportable Galley/Latrine/Seat Pallet Facility	7,216
Building 1094, 2/3 WSTs and 2 BOT	14,659
Building 1129, Composite Shop	8,500
Building 840, (Squad Ops)/AFE	1,798
Building 1183, (Squad Ops)/AFE	1,798
Building 1185, (Squad Ops)	1,798
Building 1186, (Squad Ops)/AFE	1,798
Building 850, AFRC Wing Headquarters	No change
Building 1218, Operations Group Headquarters	27,749
Building 1107, AME Storage and Maintenance	No change <sup>c</sup>
Building 1166, Interior Modifications for Data and Voice Communications	No change
Building 1171, Move Aircraft Electrical and Environmental Systems Testing Equipment from Building 1106	No change
Building 1176, Move Hydraulic Test Stand from Building 1106	No change
Taxiway D Repair <sup>d</sup>	125,676
Parking Ramp Apron Type III Fuel Hydrant System Upgrade	N/A
Apron Fill-In	13,200
Roads and Parking Upgrades	N/A
<b>Total Square Feet</b>	<b>178,648</b>
<b>Additions/Alterations</b>	
Building 1092, 1 WST	4,025
Building 1220, Mobility Bag Storage Addition	8,000
Building 852, Maintenance Training Facility	24,375
Apron Fuels Hydrant Upgrade	23 hydrants
Alpha Ramp Deicing Pad Expansions and Supporting Infrastructure	49,900
<b>Total Square Feet</b>	<b>85,400</b>
<b>New Construction</b>	
Corrosion Control, Fuel Cell and Maintenance Hangar (2-bay)	214,425
General Maintenance Hangar (3-bay) + (1-bay); Maintenance Shops, E/E Shop	174,297
FuT Facility	10,600
Dormitory	19,174
<b>Total Square Feet</b>	<b>418,496</b>

<sup>a</sup> Demolish building to construct new KC-46A hangars.

<sup>b</sup> Demolish building to construct new KC-46A FuT Facility. Demolition analyzed under previous Categorical Exclusion.

<sup>c</sup> Renovations to Building 1107 include installation of a telephone system, fiber optic drops, and mezzanine storage and shelving system.

<sup>d</sup> Taxiway F also requires repairs; however, this project was addressed in the 2012 Installation Development Environmental Assessment.

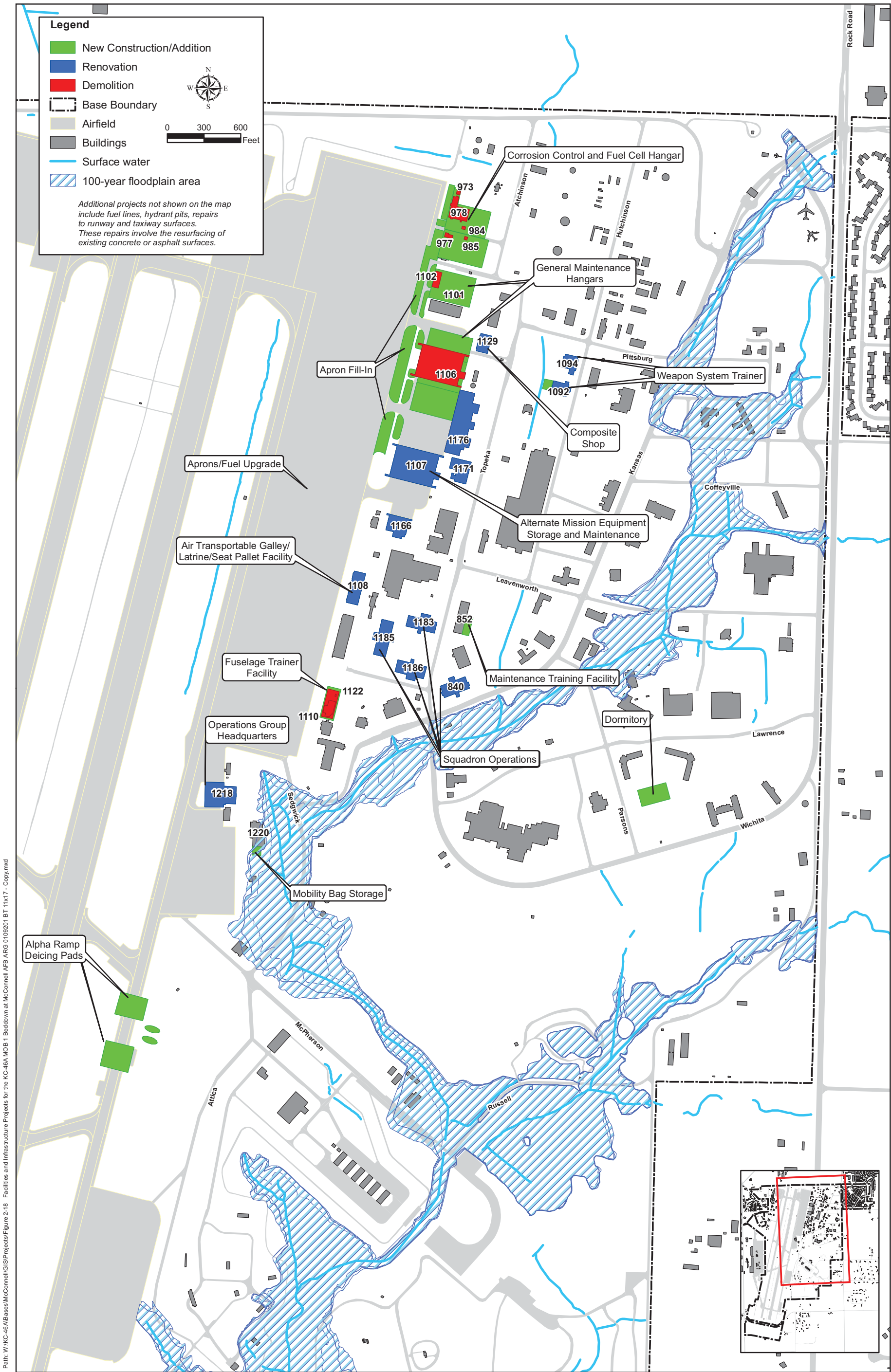


Figure 2-18. Facilities and Infrastructure Projects for the KC-46A MOB 1 Scenario at McConnell AFB

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## 2.4.4.3.2 Personnel

The current personnel at McConnell AFB and the projected personnel necessary to support the KC-46A MOB 1 mission are provided in Table 2-19. Not counting personnel from the ANG 184 IW, the base has about 4,800 personnel, including military, part-time reserve, government civilians, and contractors. The ANG would have an association with the active-duty component.

**Table 2-19. McConnell AFB MOB 1 Scenario Personnel and Dependent Changes**

Personnel	Baseline <sup>a</sup>	KC-46A MOB 1 Scenario	KC-135 Drawdown	Change	Total
Military (full-time)	3,408	1,809	-1,920	-111	3,297
Military Dependents and Family Members	3,220	2,940 <sup>c</sup>	-3,120 <sup>c</sup>	-180	3,040
Part-Time Reservists	460	1,053	-626	427	887
DoD Civilian	427	52	-38	14	441
Other Base Personnel	523	20	0	20	543
<b>Total<sup>a</sup></b>	<b>8,038<sup>b</sup></b>	<b>5,874</b>	<b>-5,704</b>	<b>170</b>	<b>8,208</b>

<sup>a</sup> Source of baseline information: 2012 McConnell AFB Economic Impact Analysis (McConnell AFB 2012c).

<sup>b</sup> Baseline does not include personnel numbers from the ANG 184 IW.

<sup>c</sup> KC-46A and drawdown KC-135 dependents estimated at 2.5 times 65 percent of full-time military personnel only.

The KC-46A MOB 1 mission at McConnell AFB would eventually replace the existing KC-135 mission. The KC-46A MOB 1 mission would require approximately 1,809 full-time military (includes 1,345 active-duty, 451 reserve [air reserve technicians] and 13 BOS) personnel, approximately 1,053 part-time reserve personnel, approximately 52 DoD civilian personnel, and approximately 20 contractors (categorized as “other base personnel”).

About 3,220 military dependents, currently associated with the full-time military personnel at McConnell AFB, live in communities surrounding McConnell AFB. The projected new military personnel are expected to be accompanied by 2,940 dependents.

## 2.4.4.3.3 Flight Operations

Table 2-20 provides a comparison of the number of annual airfield operations anticipated with the beddown of the KC-46A MOB 1 mission at McConnell AFB to the existing baseline mission. The table shows that the total annual operations would increase from 38,618 per year to 47,807, resulting in an approximate 24 percent increase in annual aircraft operations.

## 2.4.4.3.4 Auxiliary Airfields

The proposed MOB 1 mission at McConnell AFB would not require the use of auxiliary airfields. The KC-46A aircraft would utilize the existing KC-135 flight tracks, fuel jettison areas, and AR tracks.

**Table 2-20. McConnell AFB Baseline and Projected Annual MOB 1 Scenario End-State Airfield Operations<sup>a</sup>**

Aircraft	Unit Flying Days/Year	Baseline						Projected					
		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total		Landings and Takeoffs		Closed Pattern <sup>b</sup>		Total	
		Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual <sup>f</sup>	Avg. Busy Day	Annual	Avg. Busy Day	Annual	Avg. Busy Day	Annual <sup>f</sup>
KC-135	260	21.31	5,541	73.00	18,980	94.31	24,521	0	0	0	0	0	0
Transient <sup>c</sup>	260	21.83	5,676	21.83	5,676	43.66	11,352	21.83	5,676	21.83	5,676	43.66	11,352
Civilian <sup>d</sup>	365	7.52	2,745	0	0	7.52	2,745	7.52	2,745	0	0	7.52	2,745
KC-46A <sup>e</sup>	312 <sup>f</sup>	0	0	0	0	0	0	17.60	5,630	90.00	28,080	107.60	33,710
<b>Total<sup>g</sup></b>		<b>50.66</b>	<b>13,962</b>	<b>94.83</b>	<b>24,656</b>	<b>145.49</b>	<b>38,618</b>	<b>46.95</b>	<b>14,051</b>	<b>111.83</b>	<b>33,756</b>	<b>158.78</b>	<b>47,807</b>

<sup>a</sup> An operation is the accomplishment of a single maneuver such as a takeoff/departure, an arrival/landing, or half of a closed pattern.

<sup>b</sup> A closed pattern consists of two operations: one takeoff and one landing. The numbers presented are operations.

<sup>c</sup> The primary transient military aircraft types using McConnell AFB include KC-135, F-16, T-1, and T-38 (HQ AMC 2012).

<sup>d</sup> Because the Boeing Corporation and Cessna Corporation manufacturing facilities are adjacent to McConnell AFB, Boeing and Cessna aircraft compose the civilian aircraft that use McConnell AFB. The primary transient civilian aircraft types are Boeing 747 and 767 and Cessna 441.

<sup>e</sup> Approximately 10 percent of the total KC-46A operations would occur during environmental night (10:00 P.M. to 7:00 A.M.).

<sup>f</sup> The annual total represents a combination of operations resulting from local training sorties, which occur 312 days per year, and mission sorties, which occur 365 days per year. The expected 475 mission sorties per year would not normally conduct closed pattern operations, whereas training sorties would conduct an average of approximately six closed patterns per sortie.

<sup>g</sup> The total operations in this table are a combination of all aircraft operations and are based on different numbers of flying days.

## 2.5 NO ACTION ALTERNATIVE

Section 1502.14(d) of the National Environmental Policy Act (NEPA) requires the analysis of a No Action Alternative. Analysis of a No Action Alternative provides a benchmark, enabling decision makers to compare the magnitude of the environmental effects to the proposed action or alternatives. No action means that an action would not take place, and the resulting environmental effects from taking no action would be compared with the effects of allowing the proposed activity to go forward.

No action for this Final EIS reflects the *status quo*, where the KC-46A beddown would not occur at any base at this time. No KC-46A aircraft would arrive, and all existing aircraft would remain in place. No construction, renovation, or demolition of any structure or other infrastructure would occur. No KC-46A personnel changes or construction would occur, and no changes to existing flight operations would occur.

The No Action Alternative has been carried forward in the EIS per CEQ regulations and as a baseline of existing impact continued into the future against which to compare impacts of the action alternatives.

Evaluation of the No Action Alternative compares the effects of implementing the KC-46A FTU and MOB 1 scenarios with the effects of the No Action Alternative at each base and for each resource area.

At each base, there are ongoing and currently planned activities and programs that would continue, whether or not the basing of KC-46A would be implemented. These activities have been approved by the USAF and supported by existing NEPA documentation. The No Action Alternative is described for each resource area in Section 4.5

## **2.6            PREFERRED ALTERNATIVE**

The USAF identified Altus AFB as the Preferred Alternative for the FTU scenario and McConnell AFB as the Preferred Alternative for the MOB 1 scenario. Fairchild and Grand Forks AFBs were identified as reasonable alternatives for the MOB 1 scenario. The USAF selected the FTU and MOB 1 Preferred Alternatives using operational analysis, the results of site surveys, and military judgment factors.

## **2.7            COMPARISON OF ENVIRONMENTAL CONSEQUENCES**

Table 2-21 summarizes the potential environmental consequences from Chapter 4 where the FTU and MOB 1 mission requirements from Chapter 2 are overlaid on the baseline conditions from Chapter 3. The consequences are presented for each environmental resource area and are described for each Final EIS alternative.

This summary comparison of environmental consequences provides an overview of the consequences associated with implementation of the FTU and MOB 1 missions at each base. The following NEPA activities have been completed to ensure that decision makers have a comprehensive understanding of the potential environmental consequences of their decision.

- Scoping. Four public scoping meetings were conducted over a 2-week period, with public and agency input identifying important environmental resources.
- Documentation of existing environmental conditions for each alternative base. The existing conditions for these resources relied heavily on recent environmental materials and Federal and state databases prepared at and near each base.
- Base-specific assessments of environmental consequences of the beddown of the KC-46A missions. Each assessment overlaid the project details upon the existing conditions to estimate potential base-specific environmental consequences.
- Public Hearings. Four public hearings were conducted over a 2-week period, with public and agency input on the Draft EIS.

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Table 2-21. Comparative Summary of Environmental Consequences

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
Noise	Affected by 65 dB DNL or greater:  Off-base Acres: +584  Estimated off-base residents: +17  Auxiliary airfield operations would occur in the context of busy airfields. The relatively small number of proposed KC-46A operations would not result in any meaningful increases in time-averaged noise levels.	Affected by 65 dB DNL or greater:  Off-base Acres: +155  Estimated off-base residents: +6	Affected by 65 dB DNL or greater:  Off-base Acres: +53  Estimated off-base residents: +2	Affected by 65 dB DNL or greater:  Off-base Acres: +62  Estimated off-base residents: 0	Affected by 65 dB DNL or greater:  Off-base Acres: +273  Estimated off-base residents: +594  Auxiliary airfield operations would occur in the context of busy airfields. The relatively small number of proposed KC-46A operations would not result in any meaningful increases in time-averaged noise levels.	Affected by 65 dB DNL or greater:  Off-base Acres: -386  Estimated off-base residents: -199  Net reduction in time-averaged noise levels would result from replacement of the KC-135 mission.	Under the No Action Alternative, baseline conditions at each base would remain as is. No changes would occur to the noise levels surrounding each base, noise contours would remain as they are today, and no construction related noise would result from the implementation of this alternative. Impacts under the No Action Alternative would be negligible.
Air Quality	Emissions from KC-46A FTU operations would not exceed Prevention of Significant Deterioration (PSD) thresholds for volatile organic compounds (VOCs), carbon monoxide (CO), sulfur oxide (SO <sub>x</sub> ), particulate matter less than or equal to 10 microns in diameter (PM <sub>10</sub> ), or PM less than or equal to 2.5 microns in diameter (PM <sub>2.5</sub> ).  Although nitrogen oxide (NO <sub>x</sub> ) emissions from KC-46A FTU operations would exceed 250 tons per year, national ambient air quality standards (NAAQS) would likely not be exceeded.  Emissions from KC-46A operations under the FTU scenario at any auxiliary airfield would not exceed an applicable conformity or PSD threshold.	Emissions from KC-46A MOB 1 operations would not exceed PSD thresholds for VOCs, SO <sub>x</sub> , PM <sub>10</sub> , or PM <sub>2.5</sub> . Although CO and NO <sub>x</sub> emissions from KC-46A MOB 1 operations would exceed 250 tons per year, NAAQS would likely not be exceeded.	Emissions from KC-46A operations would not exceed PSD thresholds for VOCs, CO, SO <sub>x</sub> , PM <sub>10</sub> , or PM <sub>2.5</sub> .  NO <sub>x</sub> emissions from KC-46A operations would exceed the 250-tons-per-year PSD threshold. These NO <sub>x</sub> emission increases would amount to about 4 percent of the total NO <sub>x</sub> emissions generated by Spokane County in 2008, and they could be substantial enough to contribute to an exceedance of the ozone (O <sub>3</sub> ) NAAQS in the region.  The net changes in emissions generated within the Spokane CO and PM <sub>10</sub> maintenance areas would not exceed the applicable conformity thresholds of 100 tons per year for CO or PM <sub>10</sub> . Therefore, the MOB 1 scenario at Fairchild AFB would produce less than significant CO and PM <sub>10</sub> impacts within these areas.	Emissions from KC-46A operations would not exceed PSD thresholds for VOCs, SO <sub>x</sub> , PM <sub>10</sub> , or PM <sub>2.5</sub> . Although CO and NO <sub>x</sub> emissions from KC-46A operations would exceed 250 tons per year, AAQS would likely not be exceeded.	Emissions from KC-46A FTU operations would not exceed any PSD pollutant thresholds for VOCs, CO, SO <sub>x</sub> , PM <sub>10</sub> , or PM <sub>2.5</sub> .  Although NO <sub>x</sub> emission increases from KC-46A FTU operations would exceed the PSD threshold of 250 tons per year, they would likely not have the potential to contribute to an exceedance of the NO <sub>2</sub> NAAQS.  NOx emissions generated by operation of the FTU scenario would occur in an area that is in jeopardy of not continuing to attain the NAAQS for O <sub>3</sub> . Therefore, the increase in NO <sub>x</sub> (and VOC) emissions resulting from operation of the FTU scenario, in combination with existing emissions, could be substantial enough to contribute to an exceedance of the O <sub>3</sub> NAAQS in the region.  Emissions from KC-46A operations under the FTU scenario at any auxiliary airfield would not exceed an applicable PSD threshold.	Emissions from KC-46A operations would not exceed 250 tons per year for VOCs, CO, SO <sub>x</sub> , PM <sub>10</sub> , or PM <sub>2.5</sub> .  The NO <sub>x</sub> emission increases from operation of the MOB 1 scenario would be less than those estimated for the proposed FTU scenario at McConnell AFB. Therefore, similar to the FTU scenario, they would likely not have the potential to contribute to an exceedance of the NO <sub>2</sub> NAAQS. However, the increase in NO <sub>x</sub> (and VOC) emissions resulting from operation of the MOB 1 scenario, in combination with existing emissions, could be substantial enough to contribute to an exceedance of the O <sub>3</sub> NAAQS in the region.	Under the No Action Alternative, baseline conditions at each base would remain as is. No construction emissions would occur and operational emissions would be identical to the current baseline conditions. Impacts under the No Action Alternative would be negligible.
	Emissions from construction activities would be below any PSD pollutant threshold of 250 tons per year.						

Table 2-21. Comparative Summary of Environmental Consequences (Continued)

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
Safety	The basing of KC-46A aircraft under either the FTU or MOB 1 scenario is not anticipated to increase the risk of aircraft accidents due to wildlife strikes. Ongoing elements of the respective base-specific bird/wildlife aircraft strike hazard (BASH) plans would continue. Special briefings and modifications to the BASH plans addressing KC-46A operations and the potential for wildlife strikes would be provided to pilots whenever the potential exists for greater bird strikes within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.  No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A beddown scenarios. All renovation and construction activities would comply with all applicable U.S. Occupational Safety and Health Administration (OSHA) regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) and OSHA requirements are implemented. Proposed construction, renovation, and infrastructure-improvement projects related to the KC-46A aircraft scenarios would be consistent with established APZs at each base.						Under the No Action Alternative, baseline conditions at each of base would remain as is. No additional impacts would occur to flight or ground safety.
Soil and Water Resources	The total disturbed area would be less than five acres.	The total disturbed area would be less than 80 acres.	The total disturbed area would be less than 40 acres.	The total disturbed area would be less than 35 acres.	The total disturbed area would be less than 7 acres.	The total disturbed area would be less than 12 acres. The addition to Building 1220 would impact a floodplain. A Finding of No Practicable Alternative (FONPA) would be prepared should this alternative be selected.	Under the No Action Alternative, baseline conditions at each base would remain as is. None of the KC-46A proposed construction would occur and there would be no additional impacts to soil and water resources.
	Relevant stormwater and land disturbance permits would be required and stormwater plans would be updated. During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures.						
Biological Resources	No significant impacts on biological resources or wetlands are anticipated to result from implementation of the KC-46A scenarios.			Approximately 2 acres of potentially jurisdictional wetlands would be impacted. Section 404 and 401 permits and mitigation would be required should this alternative be selected.	No significant impacts on biological resources or wetlands are anticipated to result from implementation of the KC-46A scenarios.		Under the No Action Alternative, baseline conditions at each base would remain as is. No vegetation or wildlife habitat would be disturbed. No additional impacts to biological resources would be anticipated.

Table 2-21. Comparative Summary of Environmental Consequences (Continued)

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
Cultural Resources	No adverse effect on one historic property. Oklahoma State Historic Preservation Office (SHPO) has concurred with the USAF’s determination that modifications proposed for Building 285 as part of the KC-46A undertaking will not adversely affect the building’s National Register of Historic Places (NRHP) eligibility (letter from SHPO to USAF dated 29 July 2013), concluding the Section 106 consultation process.		Adverse impact to Building 2050 (hangar) and a potential adverse impact to Building 2245 (letter from SHPO to USAF dated 25 June 2013).	NHPA Section 106 SHPO consultation has been completed and includes no impacts on architectural resources. The North Dakota SHPO has concurred with the USAF’s finding that no historic properties would be affected (letter from SHPO to USAF dated 8 July 2013).	No adverse effects are anticipated on architectural resources or other historic properties. The Kansas SHPO has concurred with the USAF’s finding (letter from SHPO to USAF dated 18 June 2013).	Adverse effect on NRHP-eligible Building 1106; no adverse effect on historic properties for modifications to Buildings 1107 and 1218 (letter from SHPO to USAF dated 26 August 2013). McConnell AFB and the Kansas SHPO have signed a MOA agreeing to measures that mitigate the adverse effect on historic properties that would result from the selection of McConnell AFB for the MOB 1 scenario.	Under the No Action Alternative, baseline conditions at each base would remain as is. No additional impacts to historical buildings or other cultural resources would occur.
	No adverse Section 106 impacts to tribal resources are anticipated. Consultation with 10 tribes resulted in no disagreement with the USAF finding of no adverse impact. Section 106 consultation for the KC-46A FTU and MOB 1 beddown proposed alternatives at Altus AFB is now complete.		National Historic Preservation Act (NHPA) Section 106 consultation with the Washington Department of Archaeology and Historic Preservation (DAHP) concluded with an amendment to an existing Memorandum of Agreement (MOA) to address the possibility of adverse effects to Building 2050 (hangar) and Building 2245.	No adverse Section 106 impacts to tribal resources are anticipated. The USAF consulted with 23 tribes and one tribe expressed concerns regarding the potential for impacts. Following further consultation with the one tribe, the USAF concluded consultation with a finding of no adverse impact. Section 106 consultation for the KC-46A MOB 1 beddown proposed alternative at Grand Forks AFB is now complete.	No adverse Section 106 impacts to tribal resources are anticipated. Consultation with 12 tribes resulted in no disagreement with the USAF finding of no adverse impact. Section 106 consultation for the KC-46A FTU beddown proposed alternative at McConnell AFB is now complete.	No adverse Section 106 impacts to tribal resources are anticipated. Consultation with 12 tribes resulted in no disagreement with the USAF finding of no adverse impact. Section 106 consultation for the KC-46A MOB 1 beddown proposed alternative at McConnell AFB is now complete.	
	Impacts on archaeological resources are not expected. All project areas have been surveyed. Inadvertent discovery of previously unrecorded cultural resources would be managed in compliance with Federal and state laws and USAF regulations. Impacts on traditional cultural resources are unlikely; consultation with tribes resulted in no disagreement with the finding that there are no known tribal traditional cultural properties or traditional cultural resources at any base. Refer to Volume II, Appendix A, Section A.3, for consultation detail.						
Land Use	All new construction would occur in the appropriate base land use areas with no incompatible development planned. No impacts on land use on base from construction projects or noise from air operations are anticipated.						Under the No Action Alternative, baseline conditions at each base would remain as is. No changes would occur to planning noise contours surrounding the bases and no land use changes would occur within the base boundaries.
	Implementation of the FTU scenario would increase the off-base area affected by noise levels of 65 dB DNL or greater by 580 acres, which is mostly agricultural land and existing low-density residential land. There would be no significant effects on land use at any of the four auxiliary airfields as a result of the slight increase in aircraft operations noise.	Implementation of the MOB 1 scenario would increase the off-base area affected by noise levels of 65 dB DNL or greater by 155 acres, which is mostly agricultural land and existing low-density residential land.  No significant effects are anticipated on land use resources.	Implementation of the MOB 1 scenario would increase the off-base area affected by noise levels of 65 dB DNL or greater by 53 acres, while there would be a reduction of the affected area on base. The off-base area is primarily vacant and no residential areas would be affected. There would be a minor impact from the increased number of aircraft operations because of existing incompatible residential land use within the northern APZ II.	Implementation of the MOB 1 scenario would increase the on- and off-base areas affected by noise levels of 65 dB DNL or greater by 62 acres. Surrounding areas are agricultural and low-density residential and were previously exposed to KC-135 aircraft operations from Grand Forks AFB.	Because the FTU scenario is additive to the existing KC-135 mission, an additional 273 acres off base and 594 people would be exposed to noise levels of 65 dB DNL or greater.  The affected area includes mixed-density residential areas in Eastridge to the north and some homes in residentially zoned land to the southwest of the airfield. There would be an adverse impact on existing incompatible residential, commercial, and industrial land in the CZs and APZs from the increased number of operations at the airfield. Recommend continued coordination with local jurisdictions to provide more compatible land use zoning surrounding the airfield.	Implementation of the MOB 1 scenario would result in a net benefit to surrounding land (-386 acres) and people (-199) due to the net decrease in acres and estimated residents exposed to noise levels of 65 dB DNL or greater.	

Table 2-21. Comparative Summary of Environmental Consequences (Continued)

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
Infrastructure	Implementation of the FTU scenario would increase the average daily demand for potable water from 30 to 37 percent of base system capacity and peak demand from 51 to 59 percent. Daily discharge to the wastewater system would increase from 4 to 6 percent of base system capacity and peak discharge would increase from 6 to 8 percent. Daily demand for electricity would increase from 12 to 16 percent of base system capacity and peak demand would increase from 15 to 18 percent. Daily demand for natural gas would increase from 9 to 14 percent of base system capacity and peak demand would increase from 23 to 28 percent.	Implementation of the MOB 1 scenario would increase the average daily demand for potable water from 30 to 82 percent of base system capacity and peak demand from 51 to 103 percent of contracted amount. Daily discharge to the wastewater system would increase from 4 to 19 percent of base system capacity and peak discharge would increase from 6 to 21 percent. Daily demand for electricity would increase from 12 to 35 percent of base system capacity and peak demand would increase from 15 to 37 percent. Daily demand for natural gas would increase from 9 to 43 percent of base system capacity and peak demand would increase from 23 to 57 percent.	Implementation of the MOB 1 scenario would increase the average daily demand for potable water from 16 to 18 percent of base system capacity and peak demand from 44 to 46 percent. Daily discharge to the wastewater system would increase from 39 to 45 percent of base system capacity and peak discharge would increase from 70 to 77 percent. Increases in electrical use and natural gas associated with new facilities and increases in personnel and dependents are anticipated to be less than 1 percent of state-wide residential electrical/natural gas usage.	Implementation of the MOB 1 scenario would increase the average daily demand for potable water from 16 to 41 percent of base system capacity. Daily discharge to the wastewater system would increase from 42 to 94 percent of base system capacity. Daily demand for electricity would increase from 17 to 43 percent of base system capacity. Daily demand for natural gas would increase from 11 to 31 percent of base system capacity.	Implementation of the FTU scenario would increase the average daily demand for potable water from 10 to 15 percent of base system capacity and peak demand from 14 to 19 percent. Daily discharge to the wastewater system would increase from 7 to 9 percent of base system capacity and peak discharge would increase from 27 to 29 percent. Daily demand for electricity would increase from 47 to 56 percent of base system capacity and peak demand would increase from 60 to 69 percent. Daily demand for natural gas would increase from 16 to 23 percent of base system capacity and peak demand would increase from 36 to 43 percent.	Implementation of the MOB 1 scenario would increase the average daily demand for potable water from 10 to 11 percent of base system capacity and peak demand from 14 to 15 percent. The peak discharge to the wastewater system would increase from 27 to 28 percent of base system capacity, but average daily discharge would remain unchanged at 7 percent. Daily demand for electricity would increase from 47 to 48 percent of base system capacity and peak demand would increase from 60 to 61 percent. Daily demand for natural gas would increase from 16 to 17 percent of base system capacity and peak demand would increase from 36 to 38 percent.	Under the No Action Alternative, baseline conditions at each base would remain as is. No new construction would occur and no new personnel would arrive or decrease at any of the bases. No additional impacts to the infrastructure system at any of the bases would occur.
	Implementation of the FTU scenario would disturb less than 5 acres of land. Construction activities would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system.	Implementation of the MOB 1 scenario would disturb less than 80 acres of land. Construction activities would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system.	Implementation of the MOB 1 scenario would disturb less than 40 acres of land. Construction activities would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system.	Implementation of the MOB 1 scenario would result in approximately 28,738 tons of C&D debris to be recycled or reused and approximately 19,159 tons to be transported to landfills in the region.	Implementation of the FTU scenario would disturb less than 7 acres of land. Construction activities would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system.	Implementation of the MOB 1 scenario would disturb less than 12 acres of land. Construction activities would be conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system.	
	Implementation of the FTU scenario would result in approximately 1,937 tons of C&D debris to be recycled or reused and approximately 1,292 tons to be transported to the City of Altus Landfill or other landfills in the region.	Implementation of the MOB 1 scenario would result in approximately 29,417 tons of C&D debris to be recycled or reused and approximately 19,611 tons to be transported to the City of Altus Landfill or other landfills in the region.	Implementation of the MOB 1 scenario would result in approximately 13,763 tons of C&D debris to be recycled or reused and approximately 9,175 tons to be transported to landfills in the region.	On-base mission personnel vehicle trips would increase by approximately 70 percent. No level-of-service impacts are anticipated. However, this would increase congestion and queuing at the Main Gate and Commercial Gate during peak morning and evening traffic.	Implementation of the FTU scenario would result in approximately 2,281 tons of C&D debris to be recycled or reused and approximately 1,521 tons to be placed in the Brooks or Construction, Demolition & Recycle (CDR) Landfill or a combination of both.	Implementation of the MOB 1 scenario would result in approximately 7,736 tons of C&D debris to be recycled or reused and approximately 5,158 tons to be placed in the Brooks or CDR Landfill or a combination of both.	
	Regarding on-base transportation systems, on-base mission personnel vehicle trips would potentially increase by 12 percent and no level-of-service impacts are anticipated.	Regarding on-base transportation systems, on-base mission personnel vehicle trips would increase by 54 percent and no level-of-service impacts are anticipated. However, this would increase congestion and queuing at the Main Gate and Commercial Gate during peak morning and evening traffic.	On-base mission personnel vehicle trips would increase by 7.5 percent. No level-of-service impacts are anticipated. This could increase congestion and queuing at the Main Gate and Thorpe/Rambo Gate during peak morning and evening traffic.		On-base mission personnel vehicle trips would increase by 10 percent. No level-of-service impacts are anticipated.	On-base mission personnel vehicle trips would decrease by approximately 2 percent. No level-of-service impacts are anticipated.	

Table 2-21. Comparative Summary of Environmental Consequences (Continued)

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
<b>Hazardous Materials and Waste</b>	The types of hazardous materials and wastes are consistent with those currently being utilized and generated by the KC-135 mission, but the quantities of hazardous materials used and wastes generated would increase.			The quantities and types of hazardous materials used and wastes generated would increase relative to the current RPA missions, but would be consistent with those utilized and generated by the previous KC-135 mission.	The types of hazardous materials and wastes are consistent with those currently being utilized and generated by the KC-135 mission, but the quantities of hazardous materials used and wastes generated would increase.		Under the No Action Alternative, baseline conditions at each base would remain as is. Each base would continue to use hazardous materials and dispose of hazardous waste as described for each base’s baseline conditions.
	The systems engineering process has eliminated halon and minimized the use of the hazardous materials hexavalent chromium and cadmium. Other hazardous materials such as trichloroethane have available alternates and would not be required for the KC-46A. The preference would be to use the least hazardous material when alternatives are available. Any structures proposed for upgrade or retrofit would be inspected for asbestos-containing materials (ACM) and lead-based paint according to established procedures. Modifications and/or additions to existing buildings would occur in proximity to existing Environmental Restoration Program (ERP) sites. Formal construction waivers are not required, but the USAF requires the review of excavation and/or construction siting and compatibility with environmental cleanup sites to be conducted and documented in accordance with current environmental impact analysis processes. During the design phase for each development project, proximity to the various types of ERP sites will be evaluated to determine if additional costs will need to be included in project estimates to maintain the proper land use controls and the groundwater monitoring well networks and to incorporate proper health and safety precautions into construction plans.						
<b>Socioeconomics (all numbers are approximated)</b>	<p><b>Population</b> Overall increase in population to Jackson County from incoming military personnel, students, and family members (does not include DoD civilians, part-time Reservists, or contractors): 578 (2.2 percent increase in region of influence [ROI]).</p> <p><b>Economic Activity</b> Total increase on-base full-time military personnel, students, DoD civilians, and contractors: 619 (15.9 percent increase of on-base jobs). Total construction costs of \$52 million and O&amp;M costs of \$11 million could generate 909 jobs and \$4 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> Assuming all 144 incoming full-time military personnel would require off-base housing, the housing market in the ROI would be anticipated to support the incoming personnel. Adequate facilities on and off base are available to support the incoming students.</p> <p><b>Education</b> An estimated 140 military dependents of school age would enter any of the six school districts in Jackson County.</p>	<p><b>Population</b> Overall increase in population to Jackson County from incoming military personnel and family members (does not include DoD civilians, part-time Reservists, or contractors): 4,917 (18.6 percent increase in ROI).</p> <p><b>Economic Activity</b> Total increase on-base full-time military personnel, DoD civilians, and contractors: 1,922 (49 percent increase of on-base jobs). Total construction costs of \$400 million could generate 5,628 jobs and \$24 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> The housing market in the ROI and surrounding communities within adjacent counties would be anticipated to support the incoming personnel. An HRMA would be required.</p> <p><b>Education</b> An estimated 1,826 military dependents of school-age would enter any of the six school districts in Jackson County or surrounding communities based upon where incoming military personnel reside.</p>	<p><b>Population</b> Overall increase in population to Spokane County from incoming military personnel and family members associated with the KC-46A MOB 1 scenario and the drawdown of military personnel and family members associated with the KC-135 (does not include DoD civilians, part-time Guardsmen, or contractors): 1,095 (0.2 percent increase in ROI).</p> <p><b>Economic Activity</b> Total increase on-base full-time military personnel, DoD civilians, and contractors: 438 (9.7 percent increase of on-base jobs). Total construction costs of \$292 million could generate 3,022 jobs and \$65.5 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> Assuming all 1,656 incoming full-time military personnel associated with KC-46A would require off-base housing, and all 1,239 outgoing full-time military personnel associated with KC-135 would depart from off-base housing, the housing market in the ROI would be anticipated to support the change in personnel. An HRMA would be required.</p> <p><b>Education</b> An estimated 407 military dependents of school age would be anticipated to enter the Spokane Public School District.</p>	<p><b>Population</b> Overall increase in population to Grand Forks County from incoming military personnel and family members (does not include DoD civilians, part-time Guardsmen, or contractors): 4,526 (6.8 percent increase in ROI).</p> <p><b>Economic Activity</b> Total increase on-base full-time military personnel, DoD civilians, and contractors: 1,747 (69 percent increase of on-base jobs). Total construction costs of \$345 million could generate 4,326 jobs and \$51 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> Assuming all 1,724 incoming full-time military personnel would require off-base housing, the housing market in the ROI would be anticipated to support the incoming personnel. An HRMA would be required.</p> <p><b>Education</b> Approximately 1,681 military and non-military dependents of school age would enter any of the nine public school districts in Grand Forks County.</p>	<p><b>Population</b> Overall increase in population to Sedgwick County from incoming military personnel and family members and students (does not include DoD civilians, part-time Reservists, or contractors): 570 (0.2 percent increase in ROI).</p> <p><b>Economic Activity</b> Total increase on-base full-time military personnel, DoD civilians, students, and contractors: 679 (15.6 percent increase of on-base jobs). Total construction costs of \$154 million and O&amp;M costs of \$16 million could generate 2,234 jobs and \$36 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> Assuming all 141 incoming full-time military personnel would require off-base housing, the housing market in the ROI would be anticipated to support the incoming personnel. Adequate facilities on and off base are available to support the incoming students.</p> <p><b>Education</b> Approximately 137 military dependents of school age would enter any of the 10 public school districts in Sedgwick County.</p>	<p><b>Population</b> Overall decrease in population to Sedgwick County from incoming military personnel and family members associated with the KC-46A MOB 1 scenario and the drawdown of military personnel and family members associated with the KC-135 (does not include DoD civilians, part-time Reservists, or contractors): -291 (0.1 percent decrease in ROI).</p> <p><b>Economic Activity</b> Total change of on-base full-time military personnel, DoD civilians and contractors: -77 (1.8 percent decrease of on-base jobs). Total construction costs of \$264 million could generate 3,456 jobs and \$55 million in indirect and induced income for the duration of the construction activity.</p> <p><b>Housing</b> Assuming all 1,809 incoming full-time military personnel associated with KC-46A would require off-base housing, and all 1,920 outgoing full-time military personnel associated with KC-135 would depart from off-base housing, the housing market in the ROI would be anticipated to support the change in personnel. An HRMA would be required.</p> <p><b>Education</b> Approximately 108 military dependents of school age would no longer attend the county schools.</p>	Under the No Action Alternative, baseline conditions would remain as is. No new personnel increases or decreases would occur at any of the bases and none of the bases would receive the benefits of a population increase. No construction would occur and therefore no construction related beneficial expenditures would occur.

Table 2-21. Comparative Summary of Environmental Consequences (Continued)

Resource Area	Altus AFB		Fairchild AFB	Grand Forks AFB	McConnell AFB		No Action
	FTU	MOB 1	MOB 1	MOB 1	FTU	MOB 1	
<b>Socioeconomics (Continued) (all numbers are approximated)</b>	<p><i><b>Public Services</b></i> Demand for public services in Jackson County has increased for several years and would continue to increase with incoming population.</p> <p><i><b>Base Services</b></i> There are adequate infrastructure and staffing to support incoming military populations.</p>	<p><i><b>Public Services</b></i> Although this scenario would increase the demand for public services, because of the need for additional housing, some of the incoming personnel might reside in surrounding counties where additional public services are available.</p> <p><i><b>Base Services</b></i> Several Base services would require additional manpower and facilities to accommodate the incoming personnel.</p>	<p><i><b>Public Services</b></i> Public services would be anticipated to support the incoming population.</p> <p><i><b>Base Services</b></i> Base services have adequate capacity in the CDC, housing, fitness, and dining facilities under the existing infrastructure to support the proposed MOB 1 scenario due to the drawdown of the KC-135 mission.</p>	<p><i><b>Public Services</b></i> The increase in the county population would slightly impact police, fire, or other services and could require additional manpower to support the incoming population.</p> <p><i><b>Base Services</b></i> There is adequate infrastructure and capacity to support incoming military populations.</p>	<p><i><b>Public Services</b></i> Public services would be anticipated to support the incoming population.</p> <p><i><b>Base Services</b></i> There are adequate infrastructure and staffing to support incoming military population.</p>	<p><i><b>Public Services</b></i> Public services would be anticipated to support the change in population.</p> <p><i><b>Base Services</b></i> There are adequate infrastructure and staffing to support incoming military, particularly with the KC-135 drawdown.</p>	
<b>Environmental Justice and the Protection of Children</b>	Implementation of either scenario at any of the bases is not anticipated to disproportionately impact any minority, low-income, or off-base children populations.						Under the No Action Alternative, baseline conditions at each base would remain as is. There would be no environmental justice impacts or impacts to populations of children at any of the bases.

## **2.8 MITIGATION**

Mitigation measures avoid, minimize, remediate, or compensate for environmental impact. CEQ regulations (40 CFR 1508.20) define mitigation to include the following:

1. Avoiding the impact altogether by not taking a certain action or parts of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action, and its implementation.
3. Rectifying the impact by repairing, rehabilitating, or restoring the affected environment.
4. Reducing or eliminating the impact over time by preservation and maintenance operations during the life of the action.
5. Compensating for the impact by replacing or providing substitute resources or environments.

Avoiding, minimizing, or reducing potential impacts has been a priority guiding the development of the KC-46A scenarios and aircraft operations. Mitigation measures are either built or designed into the proposed action and alternatives; applied to construction, operation, or maintenance involved in the action; or implemented as compensatory measures. Following the EIS Record of Decision (ROD), a Mitigation Plan will be prepared in accordance with 32 CFR 989.22(d). The Mitigation Plan will address specific mitigations identified and agreed to during the Environmental Impact Analysis Process (EIAP).

Given the relative immaturity of the KC-46A program, identification of new data and information relative to the aircraft could arise and it is possible that the impacts identified in the Final EIS may be different from those expected. An understanding of various aspects that are part of a complex interrelated KC-46A operational environment may not be achieved without a more long-term process built around a continuous cycle of evaluation, learning, and improvement over time.

To accommodate this, the Mitigation Plan will identify principal and subordinate organizations having responsibility for oversight and execution of specific mitigation and management actions. The plan will be prepared in accordance with the CEQ mitigation and monitoring guidance.

### **2.8.1 Measures Proposed to Reduce Potential for Environmental Impacts**

Specific mitigation measures are presented in Table 2-22. The table identifies proposed mitigation measures to reduce the potential for environmental impacts. The table presents the mitigation measures by resource area, base, and mission.

**Table 2-22. Mitigation Measures to Reduce the Potential for Environmental Impacts**

<b>Resource Area/Alternative</b>	<b>Mitigations Measures to Reduce the Potential for Environmental Impacts</b>
<b>Noise</b>	
All Bases	No base-specific mitigation identified.
<b>Air Quality</b>	
All Bases	No base-specific mitigation identified.
<b>Safety</b>	
All Bases	No base-specific mitigation identified.
<b>Soils and Water</b>	
All Bases	No base-specific mitigation identified.
<b>Biological Resources</b>	
Altus AFB FTU	No base-specific mitigation identified.
Altus AFB MOB 1	No base-specific mitigation identified.
Fairchild AFB MOB 1	No base-specific mitigation identified.
Grand Forks AFB MOB 1	Implementation of the MOB 1 scenario at Grand Forks AFB could impact wetlands. Should Grand Forks AFB be selected for the MOB 1 mission, the USAF would work with the U.S. Army Corps of Engineers (USACE) and the North Dakota Department of Health (NDDH) to determine if any of the impacted wetlands are subject to regulation under Sections 401/404 of the Clean Water Act (CWA). If wetlands with a watershed greater than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer. The USAF would work with regulators to determine any permit conditions, including mitigation requirements (as appropriate).
McConnell AFB FTU	No base-specific mitigation identified.
McConnell AFB MOB 1	No base-specific mitigation identified.
<b>Cultural Resources</b>	
Altus AFB FTU	No base-specific mitigation identified.
Altus AFB MOB 1	No base-specific mitigation identified.
Fairchild AFB MOB 1	If Fairchild AFB is selected to host the MOB 1 scenario, mitigation for adverse impacts to cultural resources would be required. The Washington State Historic Preservation Office (SHPO) (Department of Archaeology and Historic Preservation [DAHP]) has concurred that Building 2050, constructed in 1943, is eligible for the National Register of Historic Places (NRHP). Fairchild AFB has amended the existing Section 106 Memorandum of Agreement (MOA) for the demolition of buildings in the Flight Line Historic District. This signed MOA amendment indicates that Fairchild AFB would initiate consultation with the DAHP regarding appropriate mitigations should Fairchild AFB be selected to host the MOB 1 scenario.
Grand Forks AFB MOB 1	No base-specific mitigation identified.

**Table 2-22. Mitigation Measures to Reduce the Potential for Environmental Impacts (Continued)**

Resource Area/Alternative	Mitigations Measures to Reduce the Potential for Environmental Impacts
<b>Cultural Resources (Continued)</b>	
McConnell AFB FTU	No base-specific mitigation identified.
McConnell AFB MOB 1	<p>If McConnell AFB is selected to host the MOB 1 scenario, mitigation for adverse impacts to cultural resources would be required. Building 1106 is proposed for demolition under the MOB 1 scenario and this building has been determined to be eligible for listing on the NRHP. The demolition of Building 1106 cannot be avoided by any reasonable modifications to the proposed alternative. McConnell AFB has signed a MOA with the Kansas SHPO outlining the mitigation requirements for adverse impacts to Building 1106.</p> <p><u>Mitigation for Demolition of Building 1106</u></p> <ul style="list-style-type: none"> <li>• McConnell AFB will provide materials for interpretive use by the Kansas Aviation Museum, Wichita, Kansas, in a “Military Aviation in Kansas” display. The materials may be photos, drawings, and/or historic summaries related to aviation at McConnell AFB. McConnell AFB is willing to provide these materials, which the Museum has expressed interest in displaying. Upon submittal of the full package, and receipt by the Museum, the materials become property of the Museum.</li> <li>• McConnell AFB will provide cultural resources related materials to the Wichita State University Libraries (the Library), Special Collections and University Archives, Wichita, Kansas; the SHPO will receive electronic copies of the materials. The source of materials is McConnell AFB Historic Records files and includes documents, photos, and/or drawings related to cultural resources at McConnell AFB. Examples include historic inventory reports, historic summaries, historic aerial photos, and limited original building elevation drawings of historic facilities. McConnell AFB is willing to provide these materials, which the Library has expressed interest in displaying.</li> <li>• McConnell AFB will ensure production of a “web page” suitable for internet posting, and a brochure useful for general distribution/accessibility to educate non-technical audiences within and beyond McConnell AFB. These products will focus on McConnell AFB's history in general, and will also incorporate historic buildings and their pertinent immediate and broader settings.</li> </ul> <p><u>Preservation of Buildings 1107 and 1218</u></p> <ul style="list-style-type: none"> <li>• To ensure the MOB 1 does not adversely affect these buildings, McConnell AFB will ensure all phases of design, construction, and maintenance/operation of the buildings follow applicable provisions of “<i>The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings</i>” (“Standards”; 36 CFR Part 68).</li> <li>• McConnell AFB will provide opportunities for the SHPO to review and comment on key steps of MOB 1 related design for the buildings.</li> <li>• McConnell AFB will require all parties, including contractors, involved with design, construction, and maintenance/operation of the buildings follow the Standards. Where an individual or team involved in the buildings' design, construction, and maintenance/operation reasonably would be expected to meet professional standards associated with the Standards, McConnell AFB will ensure such standards are met.</li> </ul>

**Table 2-22. Mitigation Measures to Reduce the Potential for Environmental Impacts (Continued)**

<b>Resource Area/Alternative</b>	<b>Mitigations Measures to Reduce the Potential for Environmental Impacts</b>
<b>Land Use</b>	
All Bases	No base-specific mitigation identified.
<b>Infrastructure</b>	
All Bases	No base-specific mitigation identified.
<b>Hazardous Materials and Waste</b>	
All Bases	No base-specific mitigation identified.
<b>Socioeconomics</b>	
All Bases	No base-specific mitigation identified.
<b>Environmental Justice and Protection of Children</b>	
All Bases	No base-specific mitigation identified.

## **2.9 MANAGEMENT ACTIONS**

In addition to mitigation measures, the EIS has identified a series of management actions. These management actions will be implemented in accordance with applicable regulations or USAF guidance. Specific management actions identified in the Final EIS are presented in Table 2-23. The table presents the management actions by resource area, base, and mission.

## **2.10 UNAVOIDABLE IMPACTS**

At a few locations near the four bases, KC-46A development and aircraft operations could result in disturbance and/or noise in areas that are not currently or have not recently been subjected to these effects. Some of these impacts could be considered adverse or annoying to potentially affected individuals. Potential impacts that could occur and cannot be mitigated include the following:

- With the exception of the MOB 1 scenario at McConnell AFB, an increase in the number of acres and estimated number of residents exposed to noise levels equal to or greater than 65 dB DNL would occur.
- The existing capacity of regional landfills would be reduced due to the solid waste generated.
- Although anticipated to be similar to what is currently or what was recently being generated at all four bases, hazardous and nonhazardous waste would be generated as a result of maintenance functions associated with the new aircraft.
- Individual species would be affected by land disturbance and air operations.
- Stormwater runoff and associated erosion would increase due to construction.
- The level of service on a number of roadway segments could decrease.
- There is potential for an increase in the number of bird/wildlife-aircraft strikes and aircraft mishaps resulting from the increased number of annual operations.

**Table 2–23. Management Actions to Reduce the Potential for Environmental Impacts**

<b>Resource Area/Alternative</b>	<b>Management Actions to Reduce the Potential for Environmental Impacts</b>
<b>Noise</b>	
Altus AFB FTU	<ul style="list-style-type: none"> <li>• KC-46A aircrews would mirror existing tanker operations making use of traffic patterns to the west, as well as east of Altus AFB.</li> <li>• KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.</li> <li>• Auxiliary airfields will generally not be used by KC-46A aircrews between 10:00 P.M. and 7:00 A.M.</li> </ul>
Altus AFB MOB 1	<ul style="list-style-type: none"> <li>• KC-46A aircrews would mirror existing tanker operations making use of traffic patterns to the west, as well as east of Altus AFB.</li> <li>• KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.</li> </ul>
Fairchild AFB MOB 1	<ul style="list-style-type: none"> <li>• KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.</li> </ul>
Grand Forks AFB MOB 1	<ul style="list-style-type: none"> <li>• KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.</li> </ul>
McConnell AFB FTU	<ul style="list-style-type: none"> <li>• Auxiliary airfields will generally not be used by KC-46A aircrews between 10:00 P.M. and 7:00 A.M.</li> </ul>
McConnell AFB MOB 1	<ul style="list-style-type: none"> <li>• KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.</li> </ul>
<b>Air Quality</b>	
All Bases	<p>Employ fugitive dust control and soil retention practices including:</p> <ul style="list-style-type: none"> <li>• Water trucks or sprinkler systems to keep all areas of vehicle movement damp enough to prevent dust from leaving the construction area.</li> <li>• Suspension of all soil disturbance activities when visible dust plumes emanate from the site.</li> <li>• Designating personnel to monitor the dust control program and to order increased watering, as necessary, to prevent the transport of dust off-site.</li> </ul>
<b>Safety</b>	
All Bases	<ul style="list-style-type: none"> <li>• Existing, and in the case of Grand Forks AFB, former KC-135 emergency fuel jettison locations and procedures would be used for all KC-46A missions.</li> <li>• Emergency and mishap response plans would be updated to address the needed procedures and response actions specific to the KC-46A airframe.</li> </ul>

**Table 2–23. Management Actions to Reduce the Potential for Environmental Impacts (Continued)**

<b>Resource Area/Alternative</b>	<b>Management Actions to Reduce the Potential for Environmental Impacts</b>
<b>Soils and Water</b>	
All Bases	<ul style="list-style-type: none"> <li>• Update installation Storm Water Pollution Prevention Plans (SWPPPs) to reflect new KC-46A building construction as required by state and federal CWA requirements.</li> <li>• Post construction, all disturbed areas would be re-graded to pre-construction contours.</li> <li>• Silt fence, interceptor trenches, hay bales, or other suitable erosion and sediment control measures will be used during construction, and revegetation of disturbed areas will occur as soon as practical.</li> </ul>
Altus AFB FTU	<ul style="list-style-type: none"> <li>• No base-specific management actions identified.</li> </ul>
Altus AFB MOB 1	<ul style="list-style-type: none"> <li>• Submit stamped engineering plans and specifications for any work associated with the Bureau of Reclamation-owned irrigation canal prior to construction.</li> </ul>
Fairchild AFB MOB 1	<ul style="list-style-type: none"> <li>• No base-specific management actions identified.</li> </ul>
Grand Forks AFB MOB 1	<ul style="list-style-type: none"> <li>• No base-specific management actions identified.</li> </ul>
McConnell AFB FTU	<ul style="list-style-type: none"> <li>• Continue best management practices to reduce stormwater runoff containing deicing fluid. These would include monitoring, inspection, and replacement of valves, and flushing of deicing system prior to opening diversion valves.</li> </ul>
McConnell AFB MOB 1	<ul style="list-style-type: none"> <li>• Continue best management practices to reduce stormwater runoff containing deicing fluid. These would include monitoring, inspection, and replacement of valves, and flushing of deicing system prior to opening diversion valves.</li> <li>• The proposed addition to Building 1220 is located in a 100-year floodplain. To the maximum extent practical, work in the 100-year floodplain would be minimized.</li> <li>• The proposed addition would be constructed above the base flood level.</li> </ul>
<b>Biological Resources</b>	
All Bases	<ul style="list-style-type: none"> <li>• Continue adherence to Bird/Wildlife Aircraft Strike Hazard (BASH) program.</li> </ul>
<b>Cultural Resources</b>	
All Bases	<ul style="list-style-type: none"> <li>• Track results of government-to-government consultation with tribes.</li> <li>• In the case of unanticipated or inadvertent cultural resource discoveries, the USAF would comply with Section 106 of the NHPA and follow the standard operating procedures outlined in the Integrated Cultural Resource Management Plan (ICRMP).</li> </ul>
<b>Land Use</b>	
All Bases	<ul style="list-style-type: none"> <li>• Once the full complement of KC-46A aircraft are operating at both bases, prepare an update to the current Air Installation Compatible Use Zone Study (AICUZ) to validate operational data and identify projected noise levels based on the most recent noise data.</li> </ul>

**Table 2–23. Management Actions to Reduce the Potential for Environmental Impacts (Continued)**

<b>Resource Area/Alternative</b>	<b>Management Actions to Reduce the Potential for Environmental Impacts</b>
<b>Infrastructure</b>	
All Bases	<ul style="list-style-type: none"> <li>• Incorporate Leadership in Energy and Environmental Design (LEED) and sustainable development concepts into construction projects to achieve optimum resource efficiency, sustainability, and energy conservation, except to the extent limited or prohibited by law.</li> <li>• Continue and enhance recycling and reuse programs to accommodate waste generated by the KC-46A beddown.</li> </ul>
<b>Hazardous Materials and Waste</b>	
All Bases	<ul style="list-style-type: none"> <li>• Update Hazardous Waste Management Plans to account for any new and/or changed waste streams or new procedures, if any, for managing hazardous materials and wastes associated with KC-46A aircraft.</li> <li>• Review construction plans to identify any monitoring wells that would need to be removed and/or replaced.</li> <li>• Review construction plans to identify any buildings containing toxic substances such as lead-based paint (LBP) and asbestos.</li> </ul>
<b>Socioeconomics</b>	
Altus AFB FTU	<ul style="list-style-type: none"> <li>• No base-specific management actions identified.</li> </ul>
Altus AFB MOB 1	<ul style="list-style-type: none"> <li>• Complete a Housing Requirements and Market Analysis (HRMA).</li> </ul>
Fairchild AFB MOB 1	<ul style="list-style-type: none"> <li>• Complete an HRMA.</li> </ul>
Grand Forks AFB MOB 1	<ul style="list-style-type: none"> <li>• Complete an HRMA.</li> </ul>
McConnell AFB FTU	<ul style="list-style-type: none"> <li>• Complete an HRMA.</li> </ul>
McConnell AFB MOB 1	<ul style="list-style-type: none"> <li>• Complete an HRMA.</li> </ul>
<b>Environmental Justice and Protection of Children</b>	
All Bases	<ul style="list-style-type: none"> <li>• No base-specific management actions identified.</li> </ul>

# CHAPTER 3

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## BASE-AFFECTED ENVIRONMENT





### **3.0 BASE-AFFECTED ENVIRONMENT**

This chapter is alphabetically organized by each of the four Air Force Bases (AFBs) under consideration for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) missions. The baseline or existing condition information, organized by resource area in each of the four base sections, forms the basis for the comparative analysis presented in the summary table at the end of Chapter 2 (Table 2-21). The U.S. Air Force (USAF) evaluates and compares operational and economic factors and environmental resources to determine whether to make a beddown decision at this time and, if such a decision is made, where the FTU and MOB 1 KC-46A missions would be located. The baseline conditions described in this chapter constitute conditions under the No Action Alternative.

The geographic scope of potential consequences, known as a region of influence (ROI), is described for each resource area. For most of the resource areas, the ROI is defined as areas of the base affected by aircraft operations and infrastructure upgrades. For some resources (such as noise, air quality, and socioeconomics), the ROI extends into surrounding communities unique to that specific resource area. The ROI for the FTU mission also includes the local airspace associated with the auxiliary airfields required for use by KC-46A aircraft.

The goal in producing this Final Environmental Impact Statement (EIS) has been to prepare as concise a document as possible that addresses the base-specific concerns of individuals, agencies and others while meeting the comparative needs of the USAF decision makers. Public, agency, and other comments received during scoping were used to focus the analysis on those environmental resources of interest to scoping participants. Certain environmental resources were not carried forward for separate evaluation in this Final EIS because it was determined that implementation of the KC-46A FTU or MOB 1 mission at any of the alternative bases would be unlikely to affect those resources. Airspace management and visual resources were not evaluated because there will be no new airspace proposed and no changes to the manner in which the existing airspace is used. Resource definitions, as well as the regulatory setting and methodology of the analysis, are contained in Volume II, Appendix B.

#### **3.1 ALTUS AIR FORCE BASE**

This section of Chapter 3 describes the baseline conditions of the environmental resources anticipated to be affected by implementation of the KC-46A FTU or MOB 1 scenario at Altus AFB and, when applicable, in areas surrounding the base. The baseline resource conditions are described to the level of detail necessary to support analysis of the potential impacts that could result from implementation of the KC-46A FTU or MOB 1 scenario at Altus AFB.

##### **3.1.1 Noise**

Noise, which is defined as unwanted sound, has the potential to affect several resource areas evaluated in this Final EIS. Background information on the regulatory setting and methodology for noise is contained in Volume II, Appendix B, Sections B.1.2 and B.1.3.

###### **3.1.1.1 Base-Affected Environment**

The current mission at Altus AFB is described in Section 2.4.1 and includes both C-17 and KC-135 aircraft. Table 3-1 shows noise levels of the aircraft currently based at Altus AFB at different heights above the ground during landings and takeoffs. Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly

lower noise levels than shown in Table 3-1. The noise levels in this table are presented as sound exposure levels (SELs) in decibels (dB), which are the sum of sound energy during the noise event.

**Table 3-1. Aircraft Noise Levels at Altus AFB**

Aircraft	Power Setting	SEL at Overflight Distance (in dB)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
C-17	1.15 EPR	108	102	95	88	77	68
KC-135	65% NF	100	95	90	84	75	67
Takeoff							
C-17	1.42 EPR	114	109	103	97	88	81
KC-135	90% NF	105	100	95	90	81	73

*Note:* Aircraft airspeed is 160 knots. Aircraft operate at various airspeeds in and around the airfield.

*Key:* Power Units: EPR – engine pressure ratio; NF – engine fan revolutions per minute.

*Source:* NOISEMAP 7.2 Maximum Omega 10 Results.

Of the 109,459 annual operations conducted at Altus AFB, 12 percent occur during the night between 10:00 P.M. and 7:00 A.M. Due to the potential for night noise to be particularly intrusive, noise events occurring during this time period are assessed a 10 dB penalty when calculating day-night average sound level (DNL).

The baseline noise contours shown on Figure 3-1 reflect the current level of operations at Altus AFB and were created using NOISEMAP (Version 7.2). As a point of reference, the 65 dB DNL noise contours, as published in the 2010 Air Installation Compatible Use Zone (AICUZ) report, are also shown. The relatively minor differences in noise contours result from an update of operations data based on interviews with pilots, maintainers, and air traffic control personnel as well as use of refined noise modeling algorithms in calculation of the baseline noise levels. The refined noise modeling algorithms take into account local variation in terrain (e.g., hills and valleys) and ground impedance (e.g., grass absorbs sound energy to a greater degree than water).

Table 3-2 shows the number of on- and off-base acres and estimated residents currently exposed to noise levels greater than 65 dB DNL. People regularly exposed to elevated noise levels are more likely to become annoyed by the noise. It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed, and this has been accepted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.1.7 and Volume II, Appendix C, Section C.1.3.1).

**Table 3-2. Population and Acreage Affected Under Noise Contours Near Altus AFB, Baseline Conditions**

Noise Level (dB DNL)	Baseline Conditions		
	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	97	3,433	961
70–74	22	945	914
75–79	2	191	627
80–84	0	5	467
≥85	0	0	87
<b>Total</b>	<b>121</b>	<b>4,574</b>	<b>3,056</b>

*Note:* Population estimates based on 2010 U.S. Census Bureau data. See Volume II, Appendix C, Section C.4, for more information on methods used to estimate number of residents affected.

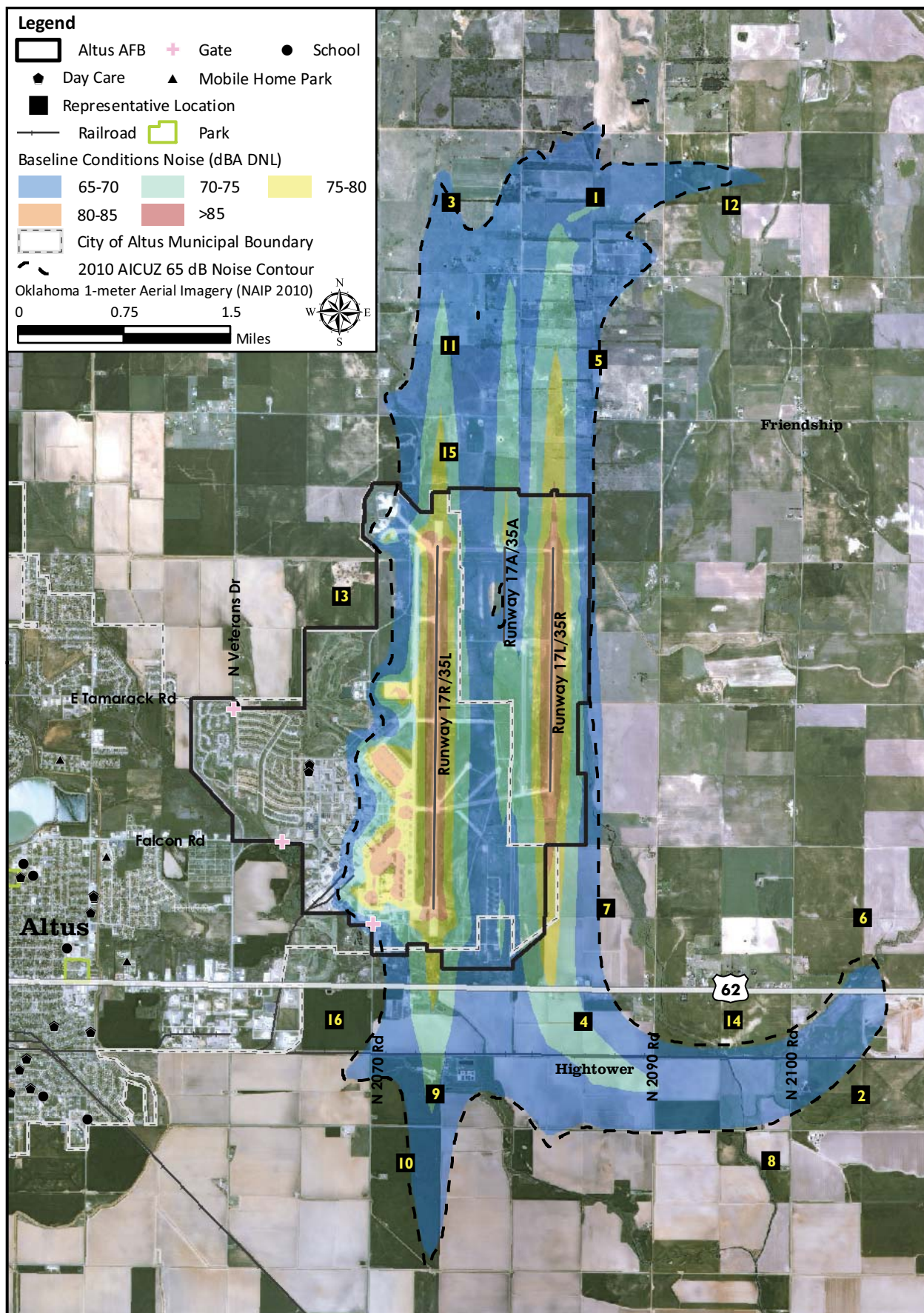


Figure 3-1. Altus AFB Baseline Noise Contours

Per U.S. Department of Defense (DoD) policy, the 80 dB DNL noise contour is used to identify populations most at risk of potential hearing loss (USD 2009). If no residence or populated area is within the 80 dB DNL contour, then no further risk assessment is warranted. Noise levels greater than 80 dB DNL affect 5 acres of off-base land outside of Altus AFB, but examination of aerial photography shows no residences in the affected area. On base, 4 buildings located along the flightline are affected by noise levels of 80 dB DNL or greater. None of the affected buildings are residential. The risk of hearing loss among workers at Altus AFB is managed according to DoD regulations for occupational noise exposure. Occupational Safety and Health Administration (OSHA) and National Institute for Occupational Safety and Health (NIOSH) occupational noise exposure regulations would continue to be enforced to protect employees of Altus AFB.

Table 3-3 presents noise conditions at several representative locations surrounding Altus AFB. The representative locations, shown on Figure 3-1, were established based on central points of U.S. Census subdivisions, and therefore do not represent a specific noise-sensitive receptor. The areas in the vicinity of the representative locations are expected to experience similar aircraft noise levels. Eight of the 16 locations currently experience noise levels greater than 65 dB DNL. Based C-17 and transient T-38 arrival and closed pattern operations generate the highest SELs at the majority of the locations analyzed. Table C-1-1 in Volume II, Appendix C, Attachment C-1, provides details regarding the operations types generating the highest SELs at each location.

**Table 3-3. Altus AFB Representative Locations Under Baseline Conditions**

Location ID	Baseline Conditions	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	69	99–107
2	62	91–97
3	66	99–102
4	71	97–102
5	65	98–101
6	62	92–97
7	67	98–101
8	61	90–94
9	71	103–104
10	64	96–101
11	70	102–104
12	63	92–98
13	58	91–93
14	63	93–98
15	73	105–106
16	60	90–95

<sup>a</sup> 'Top 5 SELs' refers to the range of loudest five event types experienced at the location (see Volume II, Appendix C, Attachment C-1).

Base flying procedures are designed to minimize impacts on the surrounding community while maximizing operational capacity and flexibility. For example, Air Force Instruction (AFI) 13-203 instructs aircrews not to overfly densely populated portions of the City of Altus at less than 4,500 feet mean sea level (MSL) (about 3,100 feet above ground level [AGL]). Similarly, aircraft departing Altus AFB under instrument flight rules are not issued instruction for westward turns until they are at or above 3,500 feet MSL (about 2,100 feet AGL). Although flights over the City of Altus are generally kept to a minimum, a western aircraft traffic pattern (which overflies the city) was introduced in 2010 to increase peak operational capacity of the

base. Following introduction of the western pattern, there was an increase in community noise complaints. Currently, approximately 25 percent of closed pattern operations occur to the west of the base.

### **3.1.2 Air Quality**

Air quality in a given location is defined by the size and topography of the air basin, the local and regional meteorological influences, and the types and concentrations of pollutants in the atmosphere, which are generally expressed in units of parts per million or micrograms per cubic meter. One aspect of significance is a pollutant's concentration in comparison to a national and/or state ambient air quality standard. These standards represent the maximum allowable atmospheric concentrations that may occur and still protect public health and welfare and include a reasonable margin of safety to protect the more sensitive individuals in the population.

The Clean Air Act (CAA) (42 *U.S. Code* [USC] 7401–7671q, as amended) provided the authority for the U.S. Environmental Protection Agency (USEPA) to establish ambient air quality standards to protect public health and welfare nationwide. National Ambient Air Quality Standards (NAAQS) exist for seven pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>), particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>), and lead. The NAAQS are listed in Volume II, Appendix B, Section B.2.1.

The CAA establishes air quality regulations and the NAAQS, and delegates the enforcement of these standards to the states. The CAA requires areas in nonattainment of an NAAQS to develop a State Implementation Plan (SIP) that details how the state will attain the standard within mandated timeframes. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area.

CAA Section 176(c) and USEPA's General Conformity implementing regulation generally prohibits federal agencies from engaging in, supporting, permitting, or approving any activity that does not conform to the most recent USEPA-approved SIP in nonattainment or maintenance areas. This means that federal projects in such areas or other activities using federal funds or requiring federal approval (1) will not cause or contribute to any new violation of an NAAQS; (2) will not increase the frequency or severity of any existing violation; or (3) will not delay the timely attainment of any standard, interim emission reduction, or other milestone. The General Conformity Rule applies to Federal actions affecting areas that are in nonattainment of an NAAQS or are designated maintenance areas. Conformity requirements only apply to nonattainment and maintenance pollutants and their precursor emissions. Conformity determinations are required when the annual direct and indirect emissions from a proposed Federal action equal or exceed an applicable de minimis threshold. These thresholds are lower for more severe nonattainment conditions. The General Conformity Rule only applies to proposed KC-46A operations from Altus AFB that would occur within the serious O<sub>3</sub> nonattainment area that encompasses the Fort Worth Alliance Airport (AFW) auxiliary airfield. Proposed KC-46A operations within this area would conform to the applicable SIP if their annual emissions remain below 50 tons per year of volatile organic compounds (VOCs) or nitrogen oxides (NO<sub>x</sub>).

Hazardous air pollutants (HAPs) are air pollutants known or suspected to cause serious health effects, such as birth defects or cancer, or adverse environmental effects. HAPs are compounds that generally have no established ambient standards. The CAA identifies 187 substances as HAPs (e.g., benzene, formaldehyde, mercury, and toluene). HAPs are emitted from a range of industrial facilities and vehicles, such as aircraft. The USEPA sets Federal regulations to reduce

HAP emissions from stationary sources. A “major” source of HAPs under the Federal Title V Operating Program is defined as any stationary facility or source that directly emits or has the potential to emit 10 tons per year or more of any HAP or 25 tons per year or more of combined HAPs.

In Oklahoma, the Air Quality Division of the Oklahoma Department of Environmental Quality (ODEQ) is responsible for enforcing air pollution regulations. The Air Quality Division enforces the NAAQS by monitoring state-wide air quality and developing rules to regulate and permit stationary sources of air emissions. The Oklahoma Air Quality Rules are found in the *Oklahoma Administrative Code* Title 252, Chapter 100 (Department of Environmental Quality Air Pollution Control).

Greenhouse gases (GHGs) trap heat in the atmosphere. Both natural processes and human activities generate these emissions. The accumulation of GHGs in the atmosphere regulates the earth’s temperature. Volume II, Appendix B, Section B.2.1.1, describes recent conditions regarding climate change and impacts on the United States, as obtained from the U.S. Global Change Research Program report, *Global Climate Change Impacts in the United States* (USGCRP 2009).

GHGs include water vapor, carbon dioxide (CO<sub>2</sub>), methane (CH<sub>4</sub>), nitrous oxide, O<sub>3</sub>, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth’s surface. The GWP of a particular gas provides a relative basis for calculating its carbon dioxide equivalent (CO<sub>2e</sub>) or the amount of CO<sub>2</sub> that emissions of that gas would be equal to; CO<sub>2</sub> has a GWP of 1 and is, therefore, the standard by which all other GHGs are measured.

Given the global nature of climate change and the current state of the science, it is not useful at this time to attempt to link the emissions quantified for local actions to any specific climatological change or resulting environmental impact. Nonetheless, the GHG emissions from the project alternatives have been quantified to the extent feasible in this Final EIS for information and comparison purposes.

### *3.1.2.1 Region of Influence and Existing Air Quality*

Air emissions produced from construction and operation of the KC-46A aircraft at Altus AFB would mainly affect air quality within Jackson County. KC-46A operations associated with the FTU scenario would also affect air quality in the immediate vicinity of auxiliary airfields and along aircraft flight routes between these locations. Identifying the ROI for air quality requires knowledge of the pollutant type, source emission rates, the proximity of project emission sources to other emission sources, and local and regional meteorology. For inert pollutants (such as CO and particulates in the form of dust), the ROI is generally limited to a few miles downwind from a source. The ROI for reactive pollutants such as O<sub>3</sub> may extend much farther downwind than for inert pollutants. O<sub>3</sub> is formed in the atmosphere by photochemical reactions of previously emitted pollutants called precursors. O<sub>3</sub> precursors are mainly NO<sub>x</sub> and photochemically reactive VOCs. In the presence of solar radiation, the maximum effect of precursor emissions on O<sub>3</sub> levels usually occurs several hours after they are emitted and many miles from their source.

Currently, Jackson County is in attainment of the NAAQS for all pollutants. The areas surrounding the auxiliary airfields proposed for use by the FTU scenario attain all of the NAAQS with the exception of AFW, which is in serious nonattainment of the O<sub>3</sub> NAAQS.

## 3.1.2.1.1 Regional Air Emissions

Table 3-4 summarizes estimates of the annual emissions generated by Jackson County in calendar year (CY) 2008 (USEPA 2013a). The majority of emissions within the region occur from (1) on-road and nonroad mobile sources (VOCs, CO, and NO<sub>x</sub>), (2) solvent/surface coating usages (VOCs), and (3) fugitive dust (PM<sub>10</sub>/PM<sub>2.5</sub>).

**Table 3-4. Annual Emissions for Jackson County, Oklahoma, CY 2008**

Source Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Stationary Sources	7,012	3,429	825	37	9,171	1,632	17,222
Mobile Sources	407	4,302	1,144	15	69	60	184,699
<b>Total</b>	<b>7,419</b>	<b>7,731</b>	<b>1,969</b>	<b>52</b>	<b>9,240</b>	<b>1,692</b>	<b>201,920</b>

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

**Source:** USEPA 2013a.

## 3.1.2.1.2 Altus AFB Emissions

Operational emissions due to existing operations at Altus AFB occur from (1) aircraft operations and engine maintenance/testing, (2) aerospace ground equipment (AGE), onsite government motor vehicles (GMVs) and privately owned vehicles (POVs), (3) offsite POV commutes, (4) nonroad mobile equipment, (5) mobile fuel transfer operations, and (6) stationary and area sources. Table 3-5 summarizes the most recent estimate of annual operational emissions that occurred at Altus AFB (CY 2012). These data were developed in part from the *2008 Mobile Source Air Emissions Inventory for Altus Air Force Base* (Weston Solutions, Incorporated 2010). Emission factors used to calculate combustive emissions for the KC-135 aircraft were based on emissions data developed by CFM International for the CFM56-2B1 engine (ICAO 2013a). The data in Table 3-5 are also used to estimate non-aircraft source emissions for future project scenarios at Altus AFB. Volume II, Appendix D, Section D.1.1, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from existing sources at Altus AFB.

**Table 3-5. Annual Emissions from Existing Operations at Altus AFB, CY 2012**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	115,409
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	60,195
Transient Aircraft Operations	1.38	5.07	3.15	0.31	0.77	0.77	530
On-Wing Aircraft Engine Testing – C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,796
On-Wing Aircraft Engine Testing – KC-135	0.99	14.32	7.07	0.82	0.05	0.05	2,278
Aerospace Ground Support Equipment	0.84	6.08	7.11	0.20	0.94	0.86	4,741
Government-Owned Vehicles	0.11	0.98	2.34	0.00	0.13	0.11	443
Privately Owned Vehicles – On Base	0.23	8.09	1.49	0.02	0.07	0.04	1,089

**Table 3-5. Annual Emissions from Existing Operations at Altus AFB, CY 2012 (Continued)**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Privately Owned Vehicles – Off Base	0.72	24.03	3.95	0.05	0.29	0.13	3,109
Nonroad Equipment	8.29	111.38	3.12	0.45	0.34	0.34	2,178
Mobile Fuel Transfer Operations	0.09	0.00	0.00	0.00	0.00	0.00	0.00
Point and Area Sources	1.91	5.85	9.65	0.17	0.00	0.00	0.00
<b>Total Emissions</b>	<b>55.39</b>	<b>573.25</b>	<b>1,069.38</b>	<b>106.96</b>	<b>262.74</b>	<b>261.86</b>	<b>191,769</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

### 3.1.3 Safety

The safety resource area applies to activities in the air and on the ground associated with aircraft flight and operation. Flight safety considers the aircraft flight risks, including the potential for bird/wildlife-aircraft strike hazard. Ground safety considers issues associated with operations and maintenance activities that support base operations, including fire response. Background information on the regulatory setting and methodology for safety is contained in Volume II, Appendix B, Sections B.3.2 and B.3.3.

#### 3.1.3.1 Flight Safety

In the previous 9 years (2003–2012), there were four Class A mishaps at Altus AFB, none of which were crashes and/or resulted in the loss of an aircraft. Three historical Class A accidents involving Altus-based aircraft occurred between 1962 and 2002 and involved loss of the aircraft. Two involved a KC-135 (in 1962 and 1987) and another (in 1974) involved a C-5 aircraft (Aviation Safety Network 2013a).

The KC-135 and the future KC-46A have the ability to jettison fuel during emergency situations. Data on historical KC-135 operations show that slightly less than two sorties per thousand resulted in a release of fuel (AMC 2013). The ability to land the KC-46A at a much higher weight than the KC-135 would be expected to reduce the frequency of fuel releases for the KC-46A. As such, it is expected that KC-46A sorties would experience a lower frequency of fuel releases.

It is USAF Air Education and Training Command (AETC) policy to follow AFIs that have been established to avoid fuel jettison, unless safety of flight dictates immediate jettison. Air Mobility Command (AMC) policy, which covers all USAF tanker assets, requires that, whenever possible, any fuel released from an aircraft must occur above 20,000 feet AGL (AMC 2004, 2012). This policy is designed to minimize potential impacts of fuel jettison events.

The main environmental concern from fuel released from an aircraft is the deposition of fuel onto the ground and/or surface waters and subsequent negative impact on human health or natural resources. The results of a definitive study on the fate of jettisoned fuel from large USAF aircraft (e.g., KC-135) (Deepti 2003) were used to identify a reasonably conservative ground-level fuel deposition value for the KC-46A. This study used the Fuel Jettison Simulation model developed by the USAF to estimate the ground deposition of fuel from jettison events (Teske and Curbishley 2000). This maximum ground-level fuel deposition value identified for the KC-46A would result in effects that are well below known natural resource and human health thresholds

for jet fuel. Therefore, the maximum fuel deposition value expected from the KC-46A would not produce substantial impacts on human health or natural resources. In view of this, no further analysis is included in this section.

#### 3.1.3.1.1 Wildlife Strike Hazard at Altus AFB and Vicinity

A bird/wildlife-aircraft strike hazard exists at Altus AFB and its vicinity due to resident and migratory bird species and other wildlife. Daily and seasonal bird movements create various hazardous conditions. While birds cannot be totally eliminated from the flight environment, measures can be taken that reduce the potential for and number of potentially hazardous bird strikes by aircraft at or near Altus AFB. Such actions prevent damage to aircraft and preserve lives and valuable resources.

Altus AFB is located along the Mid-Continental Flyway for migratory birds. Some of the species creating a hazard in this area include cattle egrets, hawks, kites, quails, and cranes. In addition to the bird species, mammals such as rabbits, hares, and occasionally coyotes wander onto the airfield and can be strike hazards.

The Altus AFB Bird/Wildlife-Aircraft Strike Hazard (BASH) Plan establishes procedures to minimize this hazard, including the removal or control of bird attractants, as well as depredation methods such as bird hunts (Altus AFB 2012a). The adopted BASH Plan establishes implementation procedures and actions that can be taken to minimize the potential of bird-aircraft strikes. Such measures include eliminating broad-leaf weeds, maintaining grass heights between 7 and 14 inches, removing perch sites and brushy or forested areas, reducing or eliminating standing water, planting non-seeding grasses or mowing before seed heads develop, and scheduling aircraft flying hours to avoid peak bird flying times.

The 97th Air Mobility Wing (AMW) has the responsibility to implement the approved BASH Plan. The BASH Plan also establishes the Bird Hazard Working Group, composed of representatives of flight safety, civil engineering, airfield management/base operations, air traffic control, operations, and other concerned organizations. For the period from Fiscal Year (FY) 2009 through FY 2012, Altus AFB personnel recorded 479 bird strikes in the airfield and airspace.

#### 3.1.3.2 Ground Safety

Altus AFB, the City of Altus, and Jackson County, Oklahoma, work collaboratively to protect the health and welfare of the surrounding community while also protecting the military mission and taxpayers' investment in Altus AFB. The specific noise exposure levels from aircraft operations in the vicinity of Altus AFB and the boundaries of the clear zones (CZs) and accident potential zones (APZs) have been released to local governments for their use in planning documents as part of the 1999 Joint Land Use Study (JLUS). All of the CZs for the runways at Altus AFB overlie government property or open land.

One building (Building 445) on Altus AFB is located within the CZ. The building is programmed for demolition as part of the Airfield Obstruction Reduction Initiative and a replacement facility has been identified. Currently, aircraft parked in 15 spots (1–8 and 41–47) on the south ramp are in violation of airfield criteria. APZs I and II extend off base to the north and south for Runway 17L/35R and 17R/35L and have a few low-density residential structures.

Capability for fire response is located on base and in the local communities. The base fire department is party to mutual-aid support agreements with the nearby communities.

### **3.1.4 Soils and Water**

#### *3.1.4.1 Soil Resources*

Altus AFB is located in the Central Redbud Plains area of the Central Lowlands physiographic region and within the geological province known as the Hollis Basin. The area surrounding the base is relatively flat and gently sloping from north to south with elevations ranging from 1,390 to 1,330 feet (Altus AFB 2009a). Soil underlying the base is primarily of the Tillman-Hollister and Miles-Nobscot associations (Altus AFB 2003). The Tillman-Hollister soils are very deep and well-drained (USDA 2002a, 2003). The textures of the Tillman-Hollister soils range from clay loam to clay, with the Hollister subsurface soils being more clayey in nature (Altus AFB 2009a). The Miles-Nobscot soils are very deep, well-drained, and moderately permeable; the Miles soils are nearly level to moderately sloping, and the Nobscot soils occur on undulating to hilly stream terraces (USDA 2002b, 2005a). The textures of the Miles-Nobscot soils range from sandy to sandy loam to sandy clay loam, with the Nobscot soils having a more sandy nature, especially in the surface soils (Altus AFB 2009a).

#### *3.1.4.2 Water Resources*

##### *3.1.4.2.1 Surface Water*

The North Fork and Salt Fork of the Red River, the major drainages of the area, are located approximately 13 miles east and 5 miles west of the base, respectively. The Tom Steed Reservoir is located approximately 15 miles northeast of the base. Surface water features on base include a couple of small impoundments, a sewage lagoon and stormwater catch basin (Altus AFB 2009a). Two watercourses (a tributary to the Ozark canal and a surface water drainage) cross the base boundary and extend under the main runway; however, both are contained by earthen levees and receive no surface water drainage from the base. Altus AFB is not located within and does not drain to any sensitive waters or watersheds (Altus AFB 2010a).

A system of underground pipes and catchment basins, with associated drainage structures, collect stormwater run-off from the base. Run-off is conveyed by ditches and streams and discharged through one of four outfalls (001–004), which are covered under the Oklahoma Pollutant Discharge Elimination System Stormwater Industrial General Permit OKR05. Each outfall has a weir, and selected parking lots have flumes to aid in preventing petroleum and oils from discharging from the base (Altus AFB 2010a). Discharge from the four outfalls flows into one of two streams, Stinking Creek and an unnamed tributary of Stinking Creek. These streams flow in a northwesterly to southeasterly direction and join prior to discharging to the North Fork of the Red River, approximately 13 miles south of the base. Stinking Creek captures drainage from the northern and eastern portions of the base, and the unnamed tributary captures drainage from the housing area and southern portion of the base (Altus AFB 2010a).

To manage on-base stormwater run-off and to protect the quality of surface water on base and in the vicinity of the base, Altus AFB has been issued a National Pollutant Discharge Elimination System (NPDES) general stormwater permit. As a part of this permit, the base analyzes stormwater samples for all permit-required parameters. The permit also requires quarterly visual monitoring, during which parameters such as color, odor, clarity/turbidity, floating and settled solids, suspended solids, foam, and oil are evaluated (Altus AFB 2010a). Stormwater discharges have historically been in compliance with permit requirements (Wallace 2013a).

#### 3.1.4.2.2 Groundwater

There are no significant aquifers underlying Altus AFB. There is very little groundwater found in the area; the limited amount of groundwater that exists is non-potable due to the high suspended solid and gypsum content (Altus AFB 2009a). Shallow groundwater at the base ranges from 1–10 feet in depth and generally flows to the south-southeast (Altus AFB 2009b).

#### 3.1.4.2.3 Floodplains

Portions of Altus AFB are located within the 100-year floodplain. The areas located within the 100-year floodplain primarily include the northeastern portion of the airfield and the residential area located in the southwestern portion of the base (Altus AFB 2009a).

### 3.1.5 Biological Resources

#### 3.1.5.1 Vegetation

Mixed grass prairie historically dominated the land associated with and surrounding Altus AFB (Altus AFB 2009a). Oklahoma mixed grass prairie ecosystems are described in detail by the Oklahoma Department of Wildlife Conservation (ODWC 2005). Most of the natural vegetative community in the vicinity of the base was altered or eliminated by agricultural activities prior to construction of the base. Much of the undeveloped areas in this region continue to be mixed grass prairie.

Improved areas of the base include developed areas that have lawns and landscape plants that require maintenance (Altus AFB 2009a). Hundreds of trees have been planted on base since its development; however, there are very few native species of trees in this area (Altus AFB 2003). Attempts to establish trees on base have been difficult because of extreme temperatures, lack of moisture, and clay soils with high salt content. Vegetation management at Altus AFB is guided by the Integrated Natural Resource Management Plan (INRMP), the Land Management and Grounds Maintenance Plan, the Wetlands and Floodplain Management Plan, and the BASH Plan (Altus AFB 2009a).

#### 3.1.5.2 Wildlife

Information on wildlife occurring on Altus AFB is provided in the INRMP (Altus AFB 2009a). Native wildlife documented on the base includes a variety of mammals and birds. White-tailed deer (*Odocoileus virginianus*) and coyotes (*Canis latrans*) are the most common large mammals, and the eastern cottontail rabbit (*Sylvilagus floridanus*), the black-tailed jackrabbit (*Lepus californicus*), and the thirteen lined ground squirrel (*Spermophilus tridecemlineatus*) are the most common small mammals (Altus AFB 2004). Although no amphibians or reptiles have been identified on Altus AFB, a variety are known to occur in Jackson County, the most common of which are the common garter snake (*Thamnophis sirtalis*), common water snake (*Nerodia sipedon*), bullfrog (*Rana catesbeiana*), king snake (*Lampropeltis* spp.), and common snapping turtle (*Chelydra serpentina*).

Altus AFB is located within the Mid-Continental Flyway (USFWS 2013a), which is a bird migration corridor generally designated for waterfowl and managed by state governments and the U.S. Fish and Wildlife Service (USFWS). Therefore, a large number of geese and ducks may occur in the general region during migration seasons. However, water habitats are limited on the base (Altus AFB 2009a).

### 3.1.5.3 *Special-Status Species*

Although no special-status species are known to occur at Altus AFB, three federally listed bird species have the potential to occur in Jackson County, Oklahoma (see Table 3-6) (OKWC 2013; USFWS 2013b). Many birds protected under the Migratory Bird Treaty Act occur as residents or migrants near Altus AFB. There is no critical habitat known to occur on base (USFWS 2013c).

**Table 3-6. Special-Status Species that Could Occur at Altus AFB**

Common Name	Scientific Name	Status		Occurrence at Altus AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
Birds				
Piping plover	<i>Charadrius melodus</i>	FC, MBTA	-	No
Whooping crane	<i>Grus americana</i>	FE, MBTA	-	No
Interior least tern	<i>Sterna antillarum</i>	FE, MBTA	-	No

<sup>a</sup> U.S. Fish and Wildlife Service

<sup>b</sup> Oklahoma Department of Wildlife Conservation

**Key:** FC – candidate for Federal listing; FE – listed as endangered under the Endangered Species Act; MBTA – protected under the Migratory Bird Treaty Act

**Source:** Altus AFB 2009a; OKWC 2013; USFWS 2013b.

### 3.1.5.4 *Wetlands*

Wetlands are limited to a few areas along Stinking Creek, an unnamed tributary, the Ozark Canal, and a few emergent wetlands scattered throughout the base. The small emergent wetlands are near the percolation basins associated with treatment systems at adjacent facilities and golf course water hazards (Altus AFB 1994). Wetlands on Altus AFB make up less than 1 acre of the base (Altus AFB 2009c).

## 3.1.6 Cultural Resources

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources.

### 3.1.6.1 *Architectural*

All buildings on Altus AFB have been evaluated for National Register of Historic Places (NRHP) eligibility. A 2003 Cold War-era inventory and assessment (AETC 2003) inventoried 16 buildings and one structure. The Oklahoma State Historic Preservation Office (SHPO) determined that none of the inventoried buildings/structures were eligible for inclusion on the NRHP. In 2013, the 97 AMW completed a historic property assessment (97 AMW 2013) of 13 facilities on the base to comply with Section 110 of the National Historic Preservation Act (NHPA). The architectural resources were evaluated based on their age and on their association with the Cold War (1945–1989) mission at Altus AFB. Altus AFB has determined that Building 285 is eligible for inclusion on the NRHP, and the SHPO has concurred.

### 3.1.6.2 *Archaeological*

Four archaeological surveys have been conducted on Altus AFB since 1987, resulting in the documentation of 10 historic archaeological sites and two historic isolated finds (Altus AFB 2009d; Baugh 1987; DeVore 1989, 1991). The entire base has been surveyed for archaeological resources (Altus AFB 2009d). There are no NRHP-eligible archaeological resources on the base.

### *3.1.6.3 Traditional*

Altus AFB has identified 10 tribes typically consulted with as part of the National Environmental Policy Act (NEPA) and Section 106 processes. These tribes are listed in Table A-1 in Volume II, Appendix A, Section A.3. There are no known tribal sacred sites or properties of traditional religious and cultural importance in the vicinity of Altus AFB.

### **3.1.7 Land Use**

Altus AFB is located in a rural area of Jackson County, Oklahoma, on the eastern edge of the City of Altus. The City of Altus is a community of about 20,000 residents. Land use surrounding Altus AFB is predominantly agricultural.

#### *3.1.7.1 Base*

Altus AFB recently updated its General Plan (GP), which includes a description of the physical development on the base, with the layout of functional areas and land uses. The east side of the base is dedicated to the airfield (centered around two parallel runways and an assault landing zone on a north-south alignment). Industrial functions, recreational areas, open space, and housing areas occupy much of the remainder of the base on the west side of the airfield, with the family housing located closest to the City of Altus.

Access to the base is through three gates. Both the Main Gate and the North Gate into the housing area are accessed directly from the east side of the City of Altus along Falcon Road and East Tamarack Road, respectively. The Southern Gate serves limited access into industrial areas with a short access road from U.S. Highway 62.

The base provides recreational amenities for base personnel and family members. Outdoor recreational areas are located on the northwest side of the main cantonment area and on the southern side of the housing area. Available opportunities include two parks, playgrounds, picnic areas, family camp, two swimming pools, and an 18-hole golf course (Altus AFB 2003).

#### *3.1.7.2 Surrounding Areas*

As shown on Figure 3-1, the land surrounding Altus AFB to the south, east, and north is primarily agricultural with a few commercial and industrial sites and isolated home sites. Residential properties are located in the vicinity of U.S. Highway 62 and N2100 Road, and to the north of the airfield between the base boundary and E1580 Road to the north, N2090 Road to the east, and N2070 Road to the west.

Compatibility planning has been on the forefront of planning for the area around Altus AFB for over a decade. The USAF provides land use recommendations to local jurisdiction through the AICUZ program. The DoD AICUZ program recommends compatible land uses based on predicted noise exposure in areas surrounding an airfield. The USAF has adopted the recommendations used by the U.S. Department of Housing and Urban Development, the Federal Aviation Administration (FAA), and the USEPA as a common standard for assessing noise levels and compatibility with land uses. The DoD AICUZ program also assesses accident potential and outlines compatible uses based on safety factors for areas nearest to the runway ends.

Altus AFB prepared an AICUZ study in 1999, which included both C-5 and C-141 operations. The last C-5 left Altus AFB in 2007, and an AICUZ update was completed in 2010. The noise contour envelope (defined by the area exposed to 65 dB DNL and above) in the original AICUZ study was larger than the current noise contour envelope created by C-17 and KC-135 operations (Altus AFB 2009c).

The estimated current off-base area affected by noise levels of 65 dB DNL and greater is 4,574 acres (see Section 3.1.1.1). Residential properties currently affected by incompatible noise levels above 65 dB DNL are located in the vicinity of U.S. Highway 62 and N2100 Road, and to the north of the airfield. The residential density in these areas is low (averaging less than one dwelling per acre). Also, a few commercial structures were identified in the original AICUZ study within the APZs. The base has acquired aviation easements and waivers for several properties around the airfield to limit potential future development and incompatible development by other parties.

A JLUS was completed in 1999 to provide further assistance with defining appropriate strategies for community planning around the base. The JLUS identified low-density residential development in the northern APZ II and the southern APZ I as incompatible. This effort was bolstered when the State of Oklahoma passed legislation governing how localities adopt zoning and subdivision regulations that would protect military facilities from encroachment. Since then, the city's planning commission and the Jackson County zoning board have joined the Metropolitan Area Planning Council in regulating land use, structure height, and development density around the airfield (Altus AFB 2009c). In 2005, the City of Altus adopted a Comprehensive Plan that is the basis for land use controls in the city's Unified Development Code. Under the Unified Development Code, proposals are assessed with respect to noise compatibility, accident potential (safety), and height of structures (that could obstruct air navigation) for an area within 3 miles of the city limits. In 2004, Jackson County Ordinance 2004-01 adopted the 1999 JLUS (Alternative 1) as the basis for compatible use zoning for areas surrounding Altus AFB. These zones limit density in areas exposed to noise levels of 65 dB DNL and greater, and recommend sound attenuation construction for new buildings. The ordinance also provided for nonconforming uses to continue without alteration (Altus AFB 2009c).

#### *3.1.7.3 Auxiliary Airfields*

As part of the KC-46A FTU training requirements, instructors and student pilots would continue to utilize the same four auxiliary airfields currently used by the KC-135, as described in Section 2.4.1.2.4. No construction or other ground disturbance is proposed at these locations, and noise is not projected to substantially increase as a result of the proposed KC-46A operations. As described in Section 4.1.7.1.3, based on preliminary screening of current and proposed operations at these airfields, only Clinton-Sherman Industrial Airpark (CSM) is carried forward for evaluation for the KC-46A FTU scenario at Altus AFB.

Aircrews from Altus AFB have historically used CSM as an auxiliary airfield to perform pattern work on a regular basis. In 2011, a letter of agreement between Altus AFB and the Oklahoma Spaceport allowed for the continued use of specific facilities at CSM, specifically a fire station with a small cadre of personnel (OSIDA 2011). Current airfield operations at CSM are described in Section 2.4.1.2.4. The small community of Burns Flat is adjacent to CSM. The surrounding land, within Washita County, is rural and sparsely populated and is predominantly used for agriculture.

### **3.1.8 Infrastructure**

#### *3.1.8.1 Potable Water System*

Potable water is provided to Altus AFB by the City of Altus. The Tom Steed Reservoir is the primary water source for the City of Altus, with the Altus Reservoir as an emergency water source. Both groundwater and the Quartz Mountain Reservoir act as additional supply sources to the base. Water supply and capacity are reported to be sufficient to meet current mission requirements. The

City of Altus has a contract with Altus AFB to provide a maximum of 1.03 million gallons per day (MGD) of potable water. The Altus AFB water system has the capacity to accommodate 2 MGD. The average water use for 2012 at Altus AFB was 0.3 MGD (USAF 2013a). This is approximately 30 percent of the provider's contracted available water supply. Peak water use at Altus AFB occurs during the summer months; in summer 2012, water demand increased to 0.52 MGD, or 51 percent of the contracted water supply. The water distribution system is in fair condition and is still mission capable, but will require moderate repair, upgrade, or new system components to maintain future sustainment (Altus AFB 2003).

#### *3.1.8.2 Wastewater*

The sanitary sewer system at Altus AFB consists of a collection system only. All wastewater is discharged to the City of Altus Wastewater Treatment Plant (WWTP) under the City of Altus Industrial Pretreatment Wastewater Discharge Permit. The City of Altus WWTP has a daily treatment capacity of 4 MGD. WWTP capacity and discharge amounts are reported to be sufficient.

The Altus AFB average wastewater discharge in 2012 was approximately 0.15 MGD, or 4 percent of the city's daily treatment capacity (USAF 2013a). The reported peak wastewater discharge in 2012 was 0.23 MGD, or 6 percent of the capacity. The wastes generated at the industrial facilities on base are of the type that can be discharged into the sanitary sewer system. Most of the sanitary sewer system at Altus AFB is over 45 years old and constructed of vitrified clay pipe or concrete. Of the sanitary sewer lines field surveyed in 2004 and 2007, approximately 85 percent were found to have structural defects; 70 percent (by length) have shallow sags; approximately 35 percent have moderate to severe sags; and 7 percent have significant debris and obstructions (USAF 2011a). About 3,000 linear feet of the system have been upgraded to polyvinyl chloride (PVC). The base has completed additional improvements to the wastewater infrastructure over the past decade to improve performance of the system.

#### *3.1.8.3 Stormwater System*

There are approximately 741 acres of impervious cover on Altus AFB (Altus AFB 2009c). Base stormwater drainage infrastructure consists of a network of drainage pipes feeding into open earthen ditches. With the exception of flood-prone areas in the northeast and southwest corners of the base, the stormwater system is reported to perform adequately (Altus AFB 2009c). Altus AFB currently maintains a Storm Water Pollution Prevention Plan (SWPPP) permit with the ODEQ. This SWPPP permit also incorporates requirements of the base NPDES permit, as described in Section 3.1.4.2.1. The permit does not, however, authorize stormwater discharges associated with construction activities. A separate Notice of Intent and SWPPP must be filed with ODEQ for all new construction activities that disturb 1 or more acre.

#### *3.1.8.4 Electrical System*

Western Farmers Electric Cooperative supplies and regulates electrical service to Altus AFB from a 69-kilovolt transmission line that enters the base on the south side. Capacity, supply and system capability are reported to be sufficient for current mission requirements. The electricity provider has the capacity to provide 1,054 megawatt hours (MWH) per day (Altus AFB 2009c). The average electric use in 2012 was 125 MWH per day (USAF 2013a). Peak electric demand occurs during the summer months and averaged 153 MWH per day in the summer of 2012. Altus AFB has utilized approximately 12 percent of the electricity provider's average daily generation capacity and 15 percent during peak periods.

### *3.1.8.5 Natural Gas System*

Natural gas is supplied by CenterPoint Energy. Capacity and supply are reported to be sufficient for current mission requirements. The base natural gas system has a design capacity to provide 3,216 thousand cubic feet (Mcf) per day (Altus AFB 2009c). The average natural gas use in 2012 at Altus AFB was 287 Mcf per day (USAF 2013a). Peak natural gas use at Altus AFB occurred during the winter months in 2012, when daily use increased to 736 Mcf. Altus AFB used approximately 9 percent of the provider's average daily capacity and 23 percent at peak use. The distribution system, including distribution lines, mains, and service lines, is considered to be in good to fair condition and may require future upgrades and system components for future sustainment. The main lines within the Capehart and Great Plains Family Housing areas are considered to be in excellent condition (Altus AFB 2009c).

### *3.1.8.6 Solid Waste Management*

All municipal solid waste and construction and demolition (C&D) waste generated at Altus AFB is collected and transported off base by a local qualified contractor. This waste is currently disposed of at the City of Altus Landfill. With a disposal area of approximately 420 acres, the landfill accepts approximately 36,104 tons of solid waste annually, including C&D waste (Altus AFB 2009c). The total capacity of the landfill is approximately 2 million tons. As of 2007, the landfill has utilized 25 acres of the 420 acres of available land. Altus AFB disposed of approximately 594 tons of solid waste in the City of Altus Landfill in 2008, representing approximately 2 percent of the overall solid waste handled by the landfill (Altus AFB 2009c). Altus AFB also has a very active recycling program. Between 2011 and 2012, approximately 620 tons of goods and materials were recycled (Altus Recycling Center Fiscal Year 11, 12).

### *3.1.8.7 Transportation*

Regional access to Altus AFB is provided from the north and south by U.S. Highway 283 (U.S. 283) and from the east and west by U.S. 62. The nearest interstate highways are Interstate 40 (I-40), which extends east-west, approximately 55 miles to the north, and I-44, which extends north-south, approximately 55 miles to the east. Figure 2-2 displays the primary routes and regional transportation network in the vicinity of Altus AFB. U.S. 283 is a two-lane highway that crosses the Oklahoma-Texas border in Jackson County at the Red River.

Access to Altus AFB is provided by Falcon Road, which accesses the Main Gate from the west, and by Challenger Road, via U.S. 62, which provides access to the South Gate. In 2011, Falcon Road had an average daily traffic count of 9,338 vehicles, and U.S. 62 just east of Challenger Road had an average daily traffic count of 5,900 vehicles (OK DOT 2012a). Veterans Drive from Tamarack Road and North Veterans Drive from U.S. 62 are major arterials to Falcon Road and the Main Gate.

The Stillwater Center Railroad connects to the base, but Altus AFB does not currently employ an active rail connection as part of the DoD's Strategic Rail Corridor Network (STRACNET). Altus AFB could reconnect to the STRACNET should the need occur (OK DOT 2012b). The nearest passenger rail line to Altus AFB is an Amtrak station in Purcell, approximately 130 miles to the east. The nearest passenger bus stations are a Greyhound stop in Lawton, approximately 56 miles to the east, and Elk City, approximately 57 miles to the north. Southwest Transit provides public transportation on a demand response basis, with local routes in Altus (including a stop on Altus AFB) and regional service to Lawton, Elk City, Mangum, Hollis, Granite, and Eldorado (OK DOT 2013). Commercial airline service is available at the Lawton-Ft. Sill Regional Airport, approximately 60 miles east of Altus AFB, with service to Dallas-Fort Worth.

The Will Rogers World Airport in Oklahoma City, with five major airlines, is approximately 130 miles northeast of Altus AFB.

#### 3.1.8.7.1 Gate Access

Access to Altus AFB is controlled through three gates. The Main Gate is located on the west side of the base at the end of Falcon Road and is used by base personnel and visitors. The Main Gate is open 24 hours a day, seven days a week and has two inbound and two outbound lanes, each reduced to one by a chicane. The peak period occurs during the morning (6:30 A.M. to 7:30 A.M.), and traffic often backs up to the signal at Veterans Drive and Falcon Road. The Jasmine Gate (North Gate) is located on North Veterans Drive south of the intersection with East Tamarack Road and serves the family housing area. The Jasmine Gate is open Monday through Friday. Queuing is minimal, and the morning peak hour inbound traffic count is the lowest of the three gates. The South Gate is located next to the industrial and fuel storage areas and is accessible from U.S. 62 and Challenger Boulevard (Altus AFB 2010b). The South Gate is used infrequently primarily by fuel supply trucks and trucks carrying explosives (Altus AFB 2003).

#### 3.1.8.7.2 On-Base Traffic Circulation

There are no on-base traffic circulation issues, and the road network is sufficient to accommodate the existing missions. Primary roads within Altus AFB include Falcon Road, First Street, Ordnance Road, Sixth Street, Seventh Street, Alert Access Road, Fir Avenue, Birch Drive, West River Drive, and Great Plains Avenue. Secondary roads include L Avenue, Fifth Street, E Avenue, F Avenue, B Avenue, Sixth Street, Dogwood Avenue, and East River Drive (Altus AFB 2003).

Recommendations for improvement include reconfiguring intersections to allow for a safer and more efficient traffic flow throughout the base, as well as identifying street hierarchy through the use of landscaping, paving and curbing details, widening or lighting, and signage fixtures.

### 3.1.9 Hazardous Materials and Waste

#### 3.1.9.1 Hazardous Materials

Hazardous materials used by USAF and contractor personnel at Altus AFB are managed in accordance with the Hazardous Materials Management Plan (HMMP) and controlled through a USAF Pollution Prevention (P2) process called Hazardous Materials Pharmacy (HAZMART) (Altus AFB 2007). The HMMP serves as the governing policy for how base maintenance shops acquire, track, and dispose of hazardous materials, along with preventing, preparing for, and responding to the potential small-scale release of hazardous materials.

As part of the overall P2 program at Altus AFB, the HAZMART provides centralized management of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials (Altus AFB 2012b). The purpose of the P2 program is to minimize the use of hazardous and toxic substances and the generation of wastes through source reduction and environmentally sound recycling. The HAZMART process includes review and approval of hazardous material use by USAF personnel to ensure users are aware of exposure and safety risks and to identify potential green alternatives. Pollution prevention measures minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal.

##### 3.1.9.1.1 Aboveground and Underground Storage Tanks

Bulk JP-8 fuel is stored in eight aboveground storage tanks (ASTs) at five fuel stand areas at Altus AFB. The bulk storage capacity of the eight ASTs is 3,562,910 gallons. Fuel consumption

over the past 3 years has been 43,695,660 gallons in 2010; 44,061,677 gallons in 2011; and 42,518,874 gallons in 2012 (Mackey 2013). There are no underground storage tanks (USTs) on Altus AFB (Staton 2013). There are two Type III hydrant systems rated at 2,400 gallons per minute (GPM) each. The “South Ramp” hydrant system services 14 parking spots dedicated to C-17s, which can be reconfigured for another 6 spots. The “North Ramp” hydrant system services 18 parking spots dedicated to KC-135s.

#### 3.1.9.1.2 Toxic Substances

Toxic substances, as regulated under the Toxic Substances Control Act (TSCA), include asbestos, lead, and polychlorinated biphenyls (PCBs). For the purposes of this Final EIS, these are evaluated in their common forms found in buildings as asbestos-containing materials (ACMs), as lead-based paint (LBP), and in transformers or other mechanical devices as PCBs.

The Asbestos Management Plan provides guidance for the identification of ACMs and the management of asbestos (Altus AFB 2010c). An asbestos facility register is maintained by the Civil Engineering (CE) squadron. The design of building alteration projects and requests for self-help projects are reviewed to determine if ACMs are present in the proposed work area. For any project on base, ACM wastes are removed by the contractor and disposed of in accordance with state and Federal regulations at a permitted off-base landfill.

The LBP Management Plan provides guidance for the identification and management of lead-containing materials (Altus AFB 2011a). An LBP facility register is maintained by CE. The design of building alteration projects and requests for self-help projects are reviewed to determine if lead-containing materials are present in the proposed work area. For any project on base, LBP wastes are removed by the contractor and disposed of in accordance with state and Federal regulations at a permitted off-base landfill.

Electrical transformers at Altus AFB reportedly do not contain PCBs (Wallace 2013b).

#### 3.1.9.2 Hazardous Waste Management

Altus AFB is classified as a large-quantity generator (LQG) (Altus AFB 2007). Aircraft maintenance activities account for approximately 90 percent of all wastes generated (Altus AFB 2010a). Maintenance-generated waste include solvents, paint, paint thinners and strippers, wastewater contaminated with solvents and heavy metals, and waste oils. Hazardous wastes generated during operations activities include cleaners, paint wastes, hydraulic fluids, lubricants, aerosols, and sealants/adhesives.

Hazardous wastes are managed in accordance with the Hazardous Waste/Recovery Waste Management Plan (Altus AFB 2007). In 2012, 17,420 pounds of hazardous wastes were removed from Altus AFB and disposed of in off-base permitted disposal facilities (Laney 2013).

Altus AFB manages spills and releases through the implementation of its Integrated Contingency Plan (ICP), which fills the requirement for a Facility Response Plan (FRP), Spill Prevention Control and Countermeasures (SPCC) Plan, and Hazardous Materials Spill Prevention and Response Plan. The ICP addresses on-base storage locations and proper handling procedures of all hazardous materials (including JP-8 used by the aircraft) to minimize potential spills and releases (Altus AFB 2012c). The ICP further outlines activities to be undertaken to minimize the adverse effects of a spill, including notification, containment, decontamination, and cleanup of spilled materials.

### 3.1.9.3 Environmental Restoration Program

The DoD developed the Environmental Restoration Program (ERP) to identify, investigate, and remediate potentially hazardous material disposal sites on DoD property. Altus AFB has identified 24 ERP sites (Altus AFB 2013). However, 13 of the 24 sites have received No Further Remedial Action Planned status, leaving 11 active ERP sites. There are four Ground Water Monitoring Units (GWMUs) at Altus AFB. The GWMUs are separate contaminant plumes, with each GWMU underlying one or more of the ERP sites.

### 3.1.10 Socioeconomics

Socioeconomics refers to features or characteristics of the social and economic environment. The main concern for socioeconomic resources is the change in personnel at Altus AFB associated with the KC-46A FTU or MOB 1 scenario that could potentially impact population, employment, earnings, housing, education, and public services. Jackson County, Oklahoma, is the ROI for this analysis.

#### 3.1.10.1 Baseline Conditions

##### 3.1.10.1.1 Population

In 2010, the population of Jackson County totaled 26,446 persons (U.S. Census 2010a). Between 2000 and 2010, the ROI population decreased at an average annual rate of 0.7 percent, with a total decrease of approximately 1,993 persons (U.S. Census 2000a, 2010a). The City of Altus, the most populated city in Jackson County and the county seat, experienced an annual 0.8 percent decline over the 10-year period (U.S. Census 2000b, 2010b). The population in Oklahoma totaled 3,751,351 persons in 2010, and increased at an average annual growth rate of 0.8 percent between 2000 and 2010 (U.S. Census 2000c, 2010c) (see Table 3-7).

**Table 3-7. Population for the City of Altus, Jackson County, and Oklahoma**

Location	2000	2010	Annual Percent Change (2000–2010)
City of Altus	21,447	19,813	-0.8%
Jackson County	28,439	26,446	-0.7%
Oklahoma	3,450,654	3,751,351	0.8%

Source: U.S. Census 2000a, 2000b, 2000c, 2010a, 2010b, 2010c.

As shown in Table 2-4 and Table 2-7, Altus AFB had a total work force of 3,891. This includes 1,379 full-time military personnel, 362 students, 1,243 DoD civilians, and 907 other base personnel. In addition, there are 1,051 military dependents and family members associated with the full-time military personnel. Approximately 19 part-time Reservists are also located at Altus AFB, but because they are not considered full-time, they were not considered part of the work force for this analysis (Altus AFB 2011b).

##### 3.1.10.1.2 Economic Activity (Employment and Earnings)

In 2011, the most recent data available, employment in Jackson County totaled 14,622 jobs (BEA 2012). The largest employment sectors in Jackson County were government (37.7 percent), followed by retail trade (11 percent) and accommodation and food services (8.4 percent) (BEA 2012). Construction accounted for 3 percent of total employment in the county. In 2012, the unemployment rate in Jackson County was 4.7 percent (BLS 2013a). The county unemployment rate was lower than the state (5.2 percent) and the Nation (8.1 percent) (BLS 2013b). As of April 2013, the monthly unemployment rate (not seasonally adjusted) for Jackson County was estimated at 4.4 percent (BLS 2013c).

Altus AFB is an important contributor to the Jackson County economy through employment of military and civilian personnel and expenditures for goods and services. The total economic impact of the base on the surrounding communities between October 2011 and September 2012 was \$350,567,997 (Altus AFB 2012d). The payroll for military, DoD civilians, and other base personnel was \$205,610,457. An estimated \$68,875,325 worth of military construction (MILCON) also occurred on base in 2012 (Altus AFB 2012d).

### 3.1.10.1.3 Housing

Table 3-8 presents census-derived housing data for the City of Altus and Jackson County. In 2010, Jackson County had 12,077 total housing units, of which 15 percent (1,830 units) were vacant (U.S. Census 2010a). The majority of available housing was located in the City of Altus with 8,890 housing units, of which 14 percent of the units (1,263) were vacant at the time of the 2010 Census (U.S. Census 2010b). Of the vacant housing units in the city and county, approximately one-third were available for rent.

**Table 3-8. Housing Data for the City of Altus and Jackson County**

Location	Housing Units	Occupied	Vacant	For Rent
City of Altus	8,890	7,627	1,263	493
Jackson County	12,077	10,247	1,830	573

*Source:* U.S. Census 2010a, 2010b, 2010c.

There are three housing options available at Altus AFB: privatized housing, unaccompanied housing, and housing in the local community. Military family housing at Altus AFB is privatized and owned by Balfour Beatty Communities. There are five neighborhoods with a total of 530 single-family homes, of which 517 are occupied, for an occupancy rate of 97.5 percent (Karibian 2013).

Dormitories and Visiting Quarters are available at Altus AFB. There are currently 58 dormitory rooms (116 beds) located in Buildings 81 and 83 on loan from Lodging for non-prior service students (USAF 2013b). There are also two dormitory buildings for permanent-party unaccompanied Airmen, located in Dorm B-331 and Dorm B-333, with a total of 204 rooms. Dorm B-333 is currently undergoing renovations; therefore, permanent-party unaccompanied Airmen are temporarily housed in Dorm B-213 (USAF 2013i). All non-prior service students will be housed in Dorm B-213, which has 96 rooms (192 beds). After renovation of Dorm B-333 has been completed, permanent-party students will relocate from Dorm B-213 to Dorm B-333. The Visiting Quarters lodging requirement is 220 rooms. Currently, 176 personnel are assigned to rooms on base and 44 personnel are residing off base (USAF 2013b). A MILCON project to construct a new 120-room facility is programmed for FY 2017 according to the base's Dormitory Master Plan.

### 3.1.10.1.4 Education

There are six school districts in Jackson County, which include ten elementary schools, two junior high schools, six high schools, and one intermediate school. The Altus School District has five elementary schools, an intermediate school, a junior high school, and a learning center (Altus Public Schools 2012). The total enrollment in Altus Schools during the 2011–2012 school year was approximately 3,851 students, with a student-to-teacher ratio of 12.7:1 (Altus Public Schools 2013). The student-to-teacher ratio is below the Oklahoma State Department of Education's guidelines, which state grades kindergarten through sixth grade should not be assigned to a teacher or class with more than 20 students (Oklahoma State DOE 2013). Middle

school teachers are limited to instruction of no more than 140 students on any 6-hour school day (Oklahoma State DOE 2013).

There is one elementary school and a youth center on Altus AFB. The L. Mendel Rivers Elementary School is for children in pre-kindergarten through fourth grade and is part of the Altus School District.

#### 3.1.10.1.5 Public Services

Public services in Jackson County include law enforcement, fire protection, emergency medical services, and medical services. The Jackson County Sheriff's Office is responsible for coordinating law enforcement activities within the unincorporated areas of the county. Jackson County hosts an enhanced 911 dispatch center (City of Altus 2013). The Altus Fire/Rescue Department is a professional fire-rescue service in the City of Altus and provides service throughout Jackson County with mutual-aid agreements with Altus AFB and the surrounding rural volunteer and small community departments (City of Altus 2013). The Altus Fire/Rescue Department is spread over two fire stations located in Altus. Jackson County Memorial Hospital in Altus, Oklahoma, is a licensed 99-bed facility in southwest Oklahoma. The hospital is located approximately 4 miles from Altus AFB.

#### 3.1.10.1.6 Base Services

The 97th Medical Group ensures maximum wartime readiness and combat capability by promoting the health, safety, and morale of active-duty personnel. The medical staff trains, mobilizes, and provides medical services in support of contingency operations worldwide. The 97th Medical Group maintains environmental safety and delivers public health services and provides family practice, flight medicine, obstetrics, behavioral health, pediatric, dental, and optometry clinics on base.

Other base services include a child development center (CDC), a dining facility, a fitness center, and Visiting Quarters. The CDC has a capacity of 215 children and is currently operating at approximately 45 percent capacity (USAF 2013b). The dining facility has a total seating capacity of 297. The facility is capable of serving 180 personnel three times every half-hour during the lunch meal. The existing base population utilizes 20 percent of the facility's serving capacity. The fitness center is currently undersized by more than 20,000 square feet for the existing base population (USAF 2013b).

### 3.1.11 Environmental Justice and the Protection of Children

Concern that certain disadvantaged communities may bear a disproportionate share of adverse health and environmental effects compared to the general population led to the enactment in 1994 of Executive Order (EO) 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*. This EO directs Federal agencies to address disproportionate environmental and human health effects in minority and low-income communities, and Title 32 of the *Code of Federal Regulations* (CFR), Part 989, *Environmental Impact Analysis Process*, addresses the need for consideration of environmental justice issues in compliance with NEPA. EO 12898 applies to Federal agencies that conduct activities that could substantially affect human health or the environment. The evaluation of environmental justice is designed as follows:

- To focus attention of Federal agencies on the human health and environmental conditions in minority communities and low-income communities with the goal of achieving environmental justice
- To foster non-discrimination in Federal programs that may substantially affect human health or the environment
- To give minority communities and low-income communities greater opportunities for public participation in, and access to, public information on matters relating to human health and the environment

EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, was enacted in 1997. EO 13045 directs Federal agencies to identify and assess environmental health and safety risks to children, coordinate research priorities on children's health, and ensure that their standards take into account special risks to children. Children are more sensitive than the adult population to certain environmental effects, such as airborne asbestos and lead paint exposures from demolition, safety with regard to equipment, accidents within structures under demolition, and noise. Activities occurring near areas that tend to have a higher concentration of children than the typical residential area during any given time, such as schools, churches, and community child care facilities, may further intensify potential impacts on children.

Jackson County, Oklahoma, represents the region of comparison for evaluating disproportionate effects (in Chapter 4) on populations of concern for environmental justice and for children. Table 3-9 shows that minorities, low-income populations, and children compose slightly higher proportions of the county population than are found in the State of Oklahoma as a whole.

**Table 3-9. Characterization of Environmental Justice Populations for Altus AFB**

Location	Total Population	Minority		Low-Income <sup>a</sup>	Youth	
		Number	Percent	Percent	Number	Percent
Jackson County	26,446	9,043	34.19%	18.90%	6,907	26.12%
Oklahoma	3,751,351	1,175,970	31.35%	16.30%	929,666	24.78%
United States	308,745,538	111,927,986	36.25%	14.30%	74,181,467	24.03%

<sup>a</sup> 2007–2011 estimate; all other values based on 2010 census.

Source: U.S. Census 2010a, 2010c, 2012.

## 3.2 FAIRCHILD AIR FORCE BASE

This section of Chapter 3 describes the baseline conditions of the environmental resources anticipated to be affected by implementation of the KC-46A MOB 1 scenario at Fairchild AFB and, when applicable, in areas surrounding the base. The baseline resource conditions are described to the level of detail necessary to support analysis of the potential impacts that could result from implementation of the KC-46A MOB 1 scenario at Fairchild AFB.

### 3.2.1 Noise

Noise, which is defined as unwanted sound, has the potential to affect several resource areas evaluated in this Final EIS. Background information on the regulatory setting and methodology for noise is contained in Volume II, Appendix B, Sections B.1.2 and B.1.3.

#### 3.2.1.1 Base-Affected Environment

The current mission at Fairchild AFB is described in Section 2.4.2 and includes KC-135 and H-1 and H-60 (helicopter) aircraft operations. Table 3-10 shows noise levels of the aircraft currently based at Fairchild AFB at different heights above the ground during landings and takeoffs. Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in Table 3-10. Helicopters rarely fly above 2,000 feet AGL. However, noise levels at higher altitudes are given for comparison with other aircraft types. The noise levels in this table are presented as SELs in dB, which are the sum of sound energy during the noise event.

**Table 3-10. Aircraft Noise Levels at Fairchild AFB**

Aircraft	Power Setting	SEL at Overflight Distance (in dB)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-135	65% NF	100	95	90	84	75	67
H-1 (helicopter)	80 kts	104	100	96	91	83	75
H-60 (helicopter)	80 kts	90	86	83	79	72	66
Takeoff							
KC-135	90% NF	105	100	95	90	81	73
H-1 (helicopter)	80 kts	104	100	96	91	83	75
H-60 (helicopter)	80 kts	90	86	83	79	72	66

**Note:** KC-135 aircraft airspeed is 160 knots. Aircraft operate at various airspeeds in and around the airfield.

**Key:** Power Units: NF – engine fan revolutions per minute; kts – knots airspeed

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results for KC-135 and RNM for H-1 and H-60.

There are 30,507 annual aircraft operations under baseline conditions at Fairchild AFB. Of these operations, 6 percent occur during the night between 10:00 P.M. and 7:00 A.M. Due to the potential for nighttime noise to be particularly intrusive, noise events occurring during this time period are assessed a 10 dB penalty when calculating DNL.

The baseline noise contours shown on Figure 3-2 show the current level of operations at Fairchild AFB and were created using NOISEMAP (Version 7.2). As a point of reference, Figure 3-2 also shows the 65 dB DNL noise contours published in the 2007 AICUZ report (USAF 2007a). Operations tempo at military bases fluctuates over time due to unit deployments, funding levels, and other factors. The AICUZ report noise contours reflect units flying at a

higher home-station operations tempo than was reported in April 2012, re-validated in February 2013, and used as the basis for the baseline noise contours shown on Figure 3-2. Baseline noise contours also differ from contours published in the 2007 AICUZ report as a result of refinements to noise modeling algorithms to account for the effects of local terrain (e.g., hills and valleys) and ground impedance (e.g., grass absorbs sound energy to a greater degree than water). Use of location-specific topographic effect modeling algorithms in NOISEMAP was not approved by the USAF for use in the 2007 AICUZ report. As can be seen on Figure 3-2, calculated noise levels have decreased since release of the 2007 AICUZ report. However, the AICUZ report is a long-term planning tool and remains relevant as an indicator of potential future noise levels if flying operations were to increase.

Table 3-11 shows the number of on- and off-base acres and estimated residents that are currently exposed to noise levels greater than 65 dB DNL. It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed, and this has been accepted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.2.7 and Volume II, Appendix C, Section C.1.3.1). Per DoD policy, the 80 dB DNL noise contour is used to identify populations most at risk of potential hearing loss (USD 2009). If no residence or populated area is within the 80 dB DNL contour, then no further risk assessment is warranted. Noise levels greater than 80 dB DNL do not affect any off-base land outside of Fairchild AFB. On base, there is 1 building in the flightline area affected by noise levels of 80 dB or greater. No residences on base are affected by noise at or above 80 dB DNL. The risk of hearing loss among workers at Fairchild AFB is managed according to DoD, OSHA, and NIOSH regulations for occupational noise exposure. These regulations would continue to be enforced to protect employees of Fairchild AFB.

**Table 3-11. Population and Acreage Affected Under Noise Contours Near Fairchild AFB, Baseline Conditions**

Noise Level (dB DNL)	Baseline Conditions		
	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	15	162	621
70–74	0	0	523
75–79	0	0	363
80–84	0	0	139
≥85	0	0	26
<b>Total</b>	<b>15</b>	<b>162</b>	<b>1,672</b>

*Note:* Population estimates were made based on 2010 U.S. Census Bureau data. The number of persons currently residing in affected areas may differ from what has been stated.

Table 3-12 presents noise conditions at several representative locations in the area near Fairchild AFB. Figure 3-2 depicts the representative locations in the vicinity of the airfield. The representative locations do not denote a specific noise-sensitive receptor, but were instead established based on central points of U.S. Census subdivisions. The areas in the vicinity of the noise-sensitive locations are expected to experience similar aircraft noise levels. All of the locations studied experience noise levels less than 65 dB DNL. Departures of transient aircraft (e.g., EA-6B and F-18) and the based H-1 helicopter are the operations that generate the highest SELs at the locations analyzed. Table C-1-2 in Volume II, Appendix C, Attachment C-1, provides details regarding the types of operations generating the highest SELs at each location.

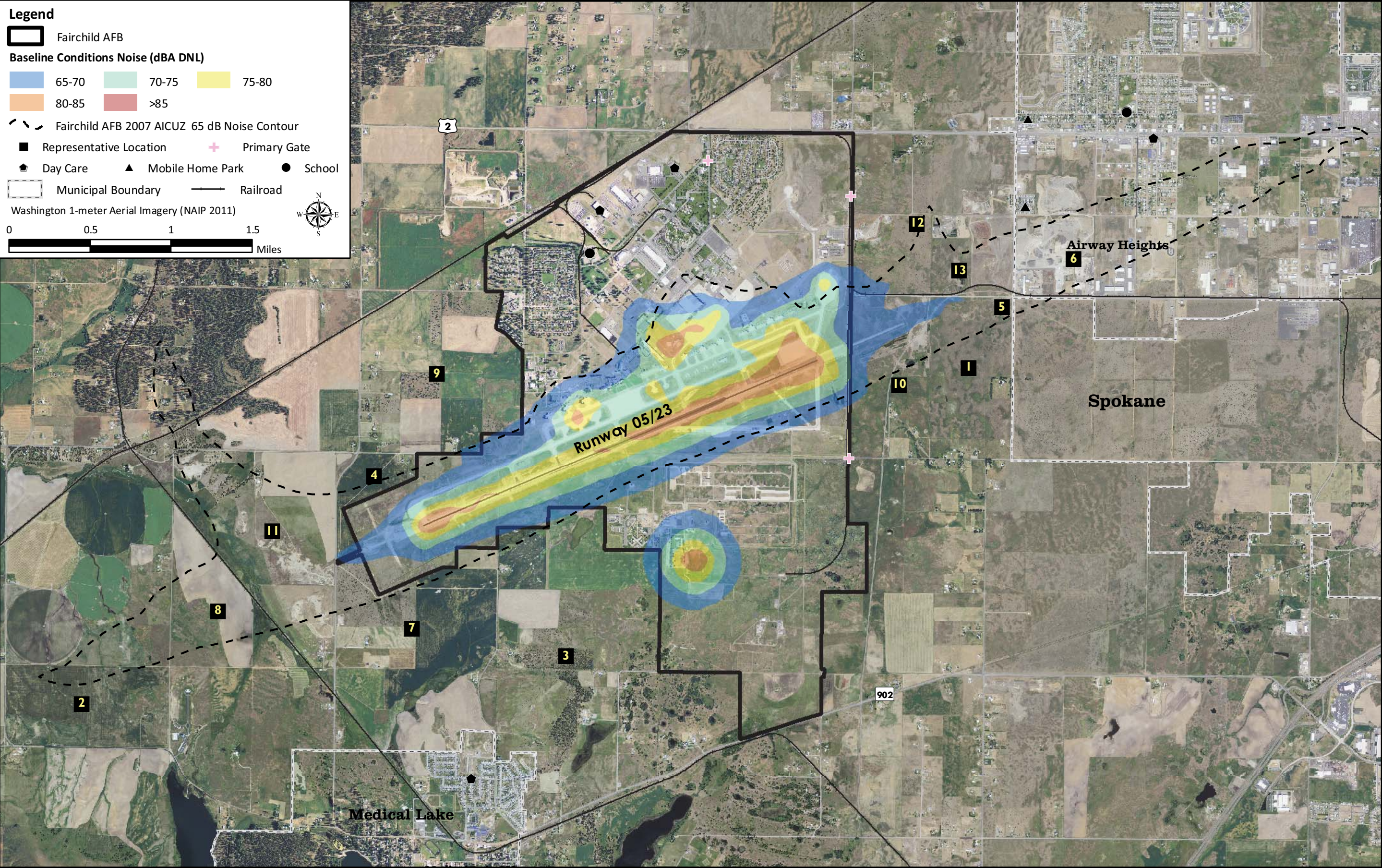


Figure 3-2. Fairchild AFB Baseline Noise Contours

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**Table 3-12. Fairchild AFB Representative Locations Under Baseline Conditions**

Location ID	Baseline Conditions	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	55	98–114
2	56	95–113
3	59	103–111
4	61	103–116
5	60	104–116
6	61	104–112
7	56	96–112
8	62	102–116
9	57	100–110
10	60	105–116
11	59	98–115
12	61	103–113
13	62	105–117

<sup>a</sup> 'Top 5 SELs' refers to the range of loudest five event types experienced at the location (see Volume II, Appendix C, Attachment C-1).

In accordance with AFI 13-201, base flying procedures have been designed to minimize impacts on the surrounding community while maximizing operational capacity and flexibility. Overflight restrictions are in place to minimize noise in sensitive areas. Overflights are not permitted over Eastern Washington State Hospital, Sunset Elementary School, or housing areas on the base. Overflights are not permitted below 1,000 feet AGL over Airway Heights Correctional Facility. Overflights over the City of Spokane are not permitted below 5,000 feet MSL for aircraft or below 500 feet AGL for helicopters. Noise complaints in the community around Fairchild AFB are relatively infrequent. Complaints range from general noise complaints to complaints of low-flying aircraft and noise from exploding ordnance. The explosive ordnance disposal (EOD) training area is located in close proximity to a residential area near the south side of the base that is often affected by explosive noise. A process has been put in place to notify the citizens near the EOD training area before training occurs.

### 3.2.2 Air Quality

Air emissions resulting from implementation of the KC-46A MOB 1 scenario at Fairchild AFB mainly would affect air quality within Spokane County. The Washington Department of Ecology uses the NAAQS to regulate air quality and establishes state standards with concentrations that are at least as restrictive as the NAAQS. Additional background information on the CAA, the NAAQS, and the Washington Ambient Air Quality Standards (WAAQS) is contained in Volume II, Appendix B, Section B.2. Information on regional climate is contained in Volume II, Appendix D, Section D.2.

The Washington Department of Ecology enforces the NAAQS and WAAQS by monitoring state-wide air quality and developing rules to regulate and permit stationary sources of air emissions. The Washington Air Quality Rules are found in *Washington Administrative Code* Chapters 173-400 through -495. Within Spokane County, the Spokane Regional Clean Air Agency (SRCAA) is the local agency that administers Federal, state, and local air pollution regulations. Fairchild AFB registered 28 stationary sources with the SRCAA in 2012.

### 3.2.2.1 Region of Influence and Existing Air Quality

Spokane County currently attains the NAAQS and WAAQS for all pollutants. The urban areas of Spokane historically did not attain the NAAQS for CO and PM<sub>10</sub>. However, they have recently attained these standards and are known as maintenance areas for these pollutants. Fairchild AFB is located approximately 4 miles west of these maintenance areas.

### 3.2.2.2 Regional Air Emissions

Table 3-13 summarizes estimates of the annual emissions generated by Spokane County in CY 2008 (USEPA 2013a). The majority of emissions within the region occur from (1) on-road and nonroad mobile sources (VOCs, CO, and NO<sub>x</sub>), (2) solvent/surface coating usages (VOCs), and (3) residential wood burning and fugitive dust from unpaved roads and agricultural tillage (PM<sub>10</sub>/PM<sub>2.5</sub>).

**Table 3-13. Annual Emissions for Spokane County, Washington, CY 2008**

Source Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Stationary Sources	26,462	11,951	1,908	164	14,911	3,159	19,492
Mobile Sources	7,098	79,942	14,467	140	878	731	2,496,165
<b>Total</b>	<b>33,560</b>	<b>91,893</b>	<b>16,375</b>	<b>304</b>	<b>15,789</b>	<b>3,890</b>	<b>2,515,657</b>

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

**Source:** USEPA 2013a.

### 3.2.2.3 Fairchild AFB Emissions

Operational emissions due to existing operations at Fairchild AFB occur from (1) aircraft operations and engine maintenance/testing, (2) AGE, (3) GMVs and POVs, (4) offsite POV commutes, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and area sources. Table 3-14 summarizes the most recent estimate of annual operational emissions that occurred at Fairchild AFB (CY 2012). Emission factors used to calculate combustive emissions for the KC-135 aircraft were based on emissions data developed by CFM International for the CFM56-2B1 engine (ICAO 2013a). These data also are used to estimate non-aircraft source emissions for the future project scenarios at Fairchild AFB. Volume II, Appendix D, Section D.2, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from existing sources at Fairchild AFB.

**Table 3-14. Annual Emissions from Existing Operations at Fairchild AFB, CY 2012**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-135 Aircraft Operations	5.92	97.27	178.37	16.32	0.89	0.89	45,460
UH-60	0.98	8.68	3.03	0.25	2.02	2.02	2,159
UH-1N	0.16	1.08	0.83	0.07	0.73	0.73	510
Transient Aircraft Operations	4.25	22.46	64.48	5.43	2.44	2.44	14,148
On-Wing Aircraft Engine Testing – KC-135	2.03	29.48	11.25	1.50	0.08	0.08	4,185
On-Wing Aircraft Engine Testing – UH-1M	0.11	0.52	0.06	0.01	0.08	0.08	55
On-Wing Aircraft Engine Testing – UH-60	0.02	0.52	0.16	0.01	0.14	0.14	96
Aerospace Ground Support Equipment	1.24	8.89	10.45	0.30	1.38	1.27	1,268

**Table 3-14. Annual Emissions from Existing Operations at Fairchild AFB, CY 2012  
(Continued)**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
GMVs/Nonroad Equipment	0.05	0.74	1.01	0.00	0.05	0.04	196
Privately Owned Vehicles – On Base	0.09	3.78	0.90	0.01	0.05	0.03	511
Privately Owned Vehicles – Off Base	2.58	102.75	21.66	0.24	1.81	1.07	13,394
Mobile Fuel Transfer Operations	0.15	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	13.48	10.68	13.07	0.09	0.97	0.97	13,718
<b>Total Emissions</b>	<b>41.96</b>	<b>286.84</b>	<b>305.27</b>	<b>24.22</b>	<b>10.65</b>	<b>9.77</b>	<b>95,699</b>

<sup>a</sup> Source does not emit particular pollutant.Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

### 3.2.3 Safety

The safety resource area applies to activities in the air and on the ground associated with aircraft flight and operation. Flight safety considers the aircraft flight risks, including the potential for bird/wildlife-aircraft strike hazard. Ground safety considers issues associated with operations and maintenance activities that support base operations, including fire response. Background information on the regulatory setting and methodology for safety is contained in Volume II, Appendix B, Sections B.3.2 and B.3.3.

#### 3.2.3.1 Flight Safety

Four Class A KC-135 aircraft mishaps were recorded between 1962 and 1987 in the vicinity of Fairchild AFB. These mishaps resulted in the loss of the aircraft. Another prominent crash involved a B-52 assigned to Fairchild AFB. On 24 June 1994, while rehearsing maneuvers for an air show, the aircraft crashed near the runway (Aviation Safety Network 2013b).

The KC-135 and the future KC-46A have the ability to jettison fuel during emergency situations. Data on historical KC-135 operations show that slightly less than two sorties per thousand resulted in a release of fuel (AMC 2013). The ability to land the KC-46A at a much higher weight than the KC-135 would be expected to reduce the frequency of fuel releases for the KC-46A. As such, it is expected that KC-46A sorties would experience a lower frequency of fuel releases.

It is the policy of the USAF Major Commands (MAJCOMs) to follow AFIs or supplement those AFIs that have been established. These policies require that pilots avoid fuel jettison, unless safety of flight dictates immediate jettison. For example, AMC policy, which covers all USAF tanker assets, requires that, whenever possible, any fuel released from an aircraft must occur above 20,000 feet AGL (AMC 2004, 2012). This policy is designed to minimize potential impacts of fuel jettison events.

The main environmental concern from fuel released from an aircraft is the deposition of fuel onto the ground and/or surface waters and subsequent negative impact on human health or natural resources. The results of a definitive study on the fate of jettisoned fuel from large USAF aircraft (e.g., KC-135) (Deepti 2003) were used to identify a reasonably conservative ground-level fuel deposition value for the KC-46A. This study used the Fuel Jettison Simulation model developed by the USAF to estimate the ground deposition of fuel from jettison events (Teske and Curbishley 2000). This maximum ground-level fuel deposition value identified for the KC-46A would result in effects that are well below known natural resource and human health thresholds.

for jet fuel. Therefore, the maximum fuel deposition value expected from the KC-46A would not produce substantial impacts on human health or natural resources. In view of this, no further analysis is included in this section.

#### 3.2.3.1.1 Wildlife Strike Hazard at Fairchild AFB and Vicinity

Most bird strikes at Fairchild AFB occur between May and October. The majority of bird strikes occur in the traffic pattern. Between 2002 and 2007, the 92nd Air Refueling Wing (ARW) experienced an average low of less than one strike in January to more than nine in September.

The 92 ARW BASH Plan provides specific guidance and assigns responsibilities in developing an effective bird strike hazard reduction program for the Fairchild AFB local flying area. This plan also provides guidance to aircrews off-station (USAF 2010a).

The BASH Plan is implemented in two phases. Phase I is concentrated on bird control and dispersal and is in effect year round. Phase II is normally implemented during seasonal migration periods typically May through October (the time of most strikes) and concentrates on bird avoidance using scheduling and airfield operating restrictions. The nearest migration route passes west of Fairchild AFB. Historical bird strike data are used to implement Phase II. In addition to scheduled Phase II months, the 92nd Operations Group implements and terminates Phase II upon notification from Wing Safety that the bird hazard has significantly increased or decreased during the period of implementation of Phase I.

#### 3.2.3.2 Ground Safety

There are currently 18 identified airfield obstructions at Fairchild AFB. USAF policy states that privately owned land located within CZs shall be acquired by the USAF either fee simple or by restrictive land easement. Accordingly, Fairchild AFB has easements for all off-base land within both CZs. Runway 05/23 at Fairchild AFB has CZs encompassing an area 3,000 feet wide by 3,000 feet long. APZ I is 3,000 feet wide by 5,000 feet long and APZ II is 3,000 feet wide by 7,000 feet long.

Agricultural, vacant, and industrial land uses are found within APZ I. While agricultural and vacant land uses are considered compatible, industrial land, depending on the specific use, could be potentially incompatible.

Within the Fairchild AFB APZ II, land use includes residential, commercial, industrial, public, vacant, and agricultural. Residential development might be compatible providing it does not exceed USAF density recommendations of one dwelling unit per acre. To the east of the base, land use designated as residential exists within APZ II and could be considered potentially incompatible depending on the specific use.

The 92nd Civil Engineering Squadron Fire and Emergency Services Flight provides 24-hour crash, structural, and emergency medical first response; technical rescue; hazardous material and weapons-of-mass-destruction incident response; and fire prevention, safety, and training/education services to Fairchild AFB. The department also has a mutual-aid agreement with the Washington State Department of Natural Resources covering Cusick Field (located approximately 75 miles from the base).

As detailed in Section 3.2.7, Spokane County has developed and implemented airport overlay zones (AOZs) to reduce the potential for airport hazards that apply to all four airports in the county, including Fairchild AFB. The AOZ program is similar in design and intent to the DoD's AICUZ program. The AOZ establishes guidelines for development around the four designated airports and has a process for how applications for development are handled.

### **3.2.4 Soils and Water**

#### *3.2.4.1 Soil Resources*

Fairchild AFB is located on the channeled scablands of the Columbia Basin, an area defined by physiographic features such as coulees, buttes, mesas, dry waterfalls, hanging valleys, and giant ripples. The area around Fairchild AFB was formed by the lava flows of the Columbia Plateau and shaped by glacial floodwaters that widened the Spokane River Valley and deposited gravel layers up to 500 feet thick (Fairchild AFB 2012a; WDNR 2013). There are nine soil map units located on Fairchild AFB: Alecanyon-Cheney (very stony), Caldwell silt loam, Cheney-Alecanyon complex, Cheney-Uhlig complex, Cocolalla ashy silt loam, Phoebe-Bong complex, Rockly-Deno complex, Saltese muck, and Uhlig ashy silt loam (USDA 2005b). In general, these soils are very deep, well-drained, and moderately permeable, with low surface run-off.

#### *3.2.4.2 Water Resources*

##### *3.2.4.2.1 Surface Water*

Fairchild AFB is located in proximity to the boundaries of three watersheds: the Lower Spokane, the Hangman, and the Palouse (WDOE 2012); however, it is considered unlikely that typical stormwater discharges from Fairchild AFB would reach water bodies located in any of the watersheds (Fairchild AFB 2008a). There are no defined, natural stream courses on Fairchild AFB. Seasonal run-off disperses across the relatively flat landscape and ponds in natural depression areas before infiltrating, evaporating, or being collected in man-made drains in the developed areas of the base (Fairchild AFB 2012a). The nearest water bodies to Fairchild AFB are the Spokane River, approximately 13 miles to the east, and several lakes (Medical, West Medical, Silver, Clear, Otter, and Granite) just to the south of the base. Surface hydrology on Fairchild AFB can generally be described as isolated from free-flowing surface waters within the watersheds, and surface water features are wetlands with seasonal or persistent ponding and stormwater catchments or conveyances (Fairchild AFB 2012a).

To manage stormwater run-off and to protect the quality of surface water on base and in the vicinity of the base, Fairchild AFB has been issued a permit under USEPA's 2008 NPDES Multi-Sector General stormwater permit. To ensure that sedimentation due to erosion does not impact local water quality, a permit is required for any construction activities greater than 1 acre (Fairchild AFB 2012a).

##### *3.2.4.2.2 Groundwater*

Several regional aquifers are located near Fairchild AFB and are the source of a portion of the base water supply: the Spokane Valley-Rathdrum Prairie Aquifer, the Latah (Hangman) Creek Aquifer, and the West Plains Aquifer. Perched groundwater can occur 5–20 feet below the ground. Shallow aquifers and groundwater movement from 20–100 feet in depth are correlated with bedrock fractures filled with gravel or deep deposits of stratified sands and gravels. Subsurface groundwater trends easterly and southeasterly from the base. Deeper confined aquifers below Fairchild AFB are correlated with basalt layers and with major aquifers at 100–200 feet and 400 feet below ground level (Fairchild AFB 2012a).

Institutional controls associated with ERP sites at Fairchild AFB have been implemented to prevent exposure from contaminated media. These controls include restrictions against the use of contaminated groundwater and restrictions on the use of groundwater as a potable water supply.

#### 3.2.4.2.3 Floodplains

No 100-year floodplains are located on Fairchild AFB.

### 3.2.5 Biological Resources

#### 3.2.5.1 Vegetation

Shrub-steppe and grasslands grading into ponderosa pine forest historically dominated the land associated with and surrounding Fairchild AFB (Fairchild AFB 2012a). The original vegetation at the base was altered by past farming, grazing, and military development and training that changed or displaced natural systems and ecological processes.

Improved areas of the base consist primarily of landscaped and turf areas surrounding buildings, residences, play areas, and recreation fields. Semi-improved areas consist of mixtures of native and non-native plants that are mowed periodically.

Natural areas are categorized for land use planning purposes as unimproved areas (Fairchild AFB 2012a). Approximately 1,400 acres in the northeast corner and southern portion of the base are unimproved and are dominated by both native and non-native pasture grasses, wetlands species, Russian olive (*Elaeagnus angustifolia*), scattered ponderosa pine stands, and shrub fields.

#### 3.2.5.2 Wildlife

Information on wildlife occurring on Fairchild AFB is contained in the INRMP (Fairchild AFB 2012a). Most of the wildlife species that occur on Fairchild AFB are located in the south base area, where wetland and other habitats are located. Native wildlife documented on the base includes a variety of mammals and birds. White-tailed deer, mule deer (*Odocoileus hemionus*), and coyote are the most common large mammals. Typical bird species include red-tailed hawk (*Buteo jamaicensis*), northern harrier (*Circus cyaneus*), great horned owl (*Bubo virginianus*), ring-necked pheasant (*Phasianus colchicus*), and a variety of waterfowl and songbird species. A recent herpetological survey documented four reptile and three amphibian species in the southern portion of the base (Sperry 2013).

Fairchild AFB is located within the Pacific Flyway, which is a bird migration corridor primarily designated for waterfowl. Large numbers of Canada geese and ducks are known to migrate through this area.

#### 3.2.5.3 Special-Status Species

In Washington State, special-status species are listed by the Washington Fish and Wildlife Commission under the provisions of *Washington Administrative Code* Rule 232-12-297 (Endangered, Threatened, and Sensitive Wildlife Species Classification). Listing occurs in much the same stepwise procedure as occurs at the Federal level. Species can be state-listed as endangered, threatened, or candidate. Table 3-15 presents the Federal and state-listed species identified as either occurring or potentially occurring at Fairchild AFB (USFWS 2013b; WDFW 2013; WDNR 2012). There is no critical habitat known to occur on base (USFWS 2013c).

Of the 18 potentially occurring bird species in Table 3-15, only the bald (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) have been observed on base (Eastern Washington University 2005). Bald eagles are known to nest throughout Washington and migrate through the area encompassing and adjacent to the base. Golden eagle habitat generally consists of open country and open wooded country. No known eagle nests have been observed at the base. The species previously observed are most likely migrating individuals passing through the area.

**Table 3-15. Special-Status Species that Could Occur at Fairchild AFB**

Common Name	Scientific Name	Status		Occurrence at Fairchild AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
Birds				
American white pelican	<i>Pelicanus erythrorhynchus</i>	MBTA	SE	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted, BGEPA	SS	Yes
Black-backed woodpecker	<i>Picoides arcticus</i>	MBTA	SC	No
Burrowing owl	<i>Athene cunicularia</i>	MBTA	SC	No
Ferruginous hawk	<i>Buteo regalis</i>	MBTA	ST	No
Flammulated owl	<i>Otus flammeolus</i>	-	SC	No
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA	SC	Yes
Lewis’ woodpecker	<i>Melanerpes lewis</i>	MBTA	SC	No
Loggerhead shrike	<i>Lanius ludovicianus</i>	MBTA	SC	No
Merlin	<i>Falco columbianus</i>	MBTA	SC	No
Northern goshawk	<i>Accipitor gentilis</i>	MBTA	SC	No
Pileated woodpecker	<i>Drycopus pileatus</i>	MBTA	SC	No
Sage sparrow	<i>Amphispiza belli</i>	MBTA	SC	No
Sage thrasher	<i>Oreoscoptes montanus</i>	MBTA	SC	No
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	-	ST	No
Upland sandpiper	<i>Bartramia longicauda</i>	MBTA	SE	No
Vaux’s swift	<i>Chaetura vauxi</i>	MBTA	SE	No
Western grebe	<i>Aechmophorous occidentalis</i>	MBTA	SC	No
Mammals				
Black-tailed jackrabbit	<i>Lepus californicus</i>	-	SC	No
Townsend’s big-eared bat	<i>Coryhorhinus townsendii</i>	-	SC	No
Washington ground squirrel	<i>Spermophilus washingtoni</i>	FC	SC	No
White-tailed jackrabbit	<i>Lepus townsendii</i>	-	SC	No
Reptiles/Amphibians				
Boreal toad	<i>Bufo boreas</i>	-	SC	No
Columbia spotted frog	<i>Rana luteiventris</i>	-	SC	Yes
Northern leopard frog	<i>Rana pipens</i>	-	SE	No
Invertebrates				
Juniper hairstreak	<i>Mitoura grynea barryi</i>	-	SC	No
Mann’s mollusk-eating ground beetle	<i>Scaphinotus mannii</i>	-	SC	No
Shepherd’s parnassian	<i>Parnassius clodius shepherdii</i>	-	SC	No
Silver-bordered fritillary	<i>Boloria selene atrocostalis</i>	-	SC	No
Plants				
American pillwort	<i>Pilularia americana</i>	-	ST	Yes
Austin’s knotweed	<i>Polygonum austini</i>	-	ST	No
Dwarf rush	<i>Juncus hemiendytus</i> var. <i>hemiandytus</i>	-		No
Grand redstem	<i>Ammannia robusta</i>	-	ST	No
Howellia	<i>Howellia aquatilis</i>	FT	ST	No
Inch-high rush	<i>Juncus uncialis</i>	-	SS	Yes
Lowland toothcup	<i>Rotala ramosior</i>	-	ST	No
Mousetail	<i>Myosurus laevicaulis</i>	-	SS	Yes
Northwestern yellowflax	<i>Sclerolinon digynum</i>	-	ST	Yes
Palouse goldenweed	<i>Haplopappus liatrisformis</i>	-	ST	No
Rocky Mountain bulrush	<i>Scirpus saximontanus</i>	-	ST	No
Spalding’s catchfly	<i>Silene spaldingi</i>	FT	ST	Yes
Yellow lady’s slipper	<i>Cypripedium parviflorum</i>	-	ST	No

<sup>a</sup> U.S. Fish and Wildlife Service<sup>b</sup> Washington Department of Fish and Wildlife and Washington Department of Natural Resources

**Key:** BGEPA – protected under the Bald and Golden Eagle Protection Act; FC – candidate for Federal listing; FT – listed as threatened under the Endangered Species Act; MBTA – protected under the Migratory Bird Treaty Act; SC – candidate for state listing; SE – state-listed as endangered; SS – state-listed as sensitive; ST – state-listed as threatened

**Source:** Fairchild AFB 2012a; USFWS 2013b; WDFW 2013; WDNR 2012.

None of the mammal species listed in Table 3-15 have been observed on Fairchild AFB. There is no significant fish habitat located at the base.

Of the three reptile/amphibian species in Table 3-15, only the Columbia spotted frog (*Rana luteiventris*) has been identified on Fairchild AFB. Populations were located in the wildlife area, in the flightline ditch, at the Munitions Storage Area pond, the EOD range, and the Reserve Training camp area.

Of the 13 plant species in Table 3-15, only 5 have been identified on base: Spalding's catchfly (*Silene spaldingi*), American pillwort (*Pilularia americana*), inch-high rush (*Juncus uncialis*), mousetail (*Myosurus clavicaulis*), and Northwestern yellowflax (*Sclerolinon digynum*) (Fairchild AFB 2012a). All of these species occur in the southern portion of Fairchild AFB, outside of the project area.

#### *3.2.5.4 Wetlands*

There are approximately 219 acres of disturbed and semi-natural wetlands on Fairchild AFB (Fairchild AFB 2012a). Wetlands and associated fringe communities occur around potholes and vernal pools in the southern portion of the base. The southeast edge of the main base supports a large wetland complex consisting of Russian olive scrub-shrub habitat and a mosaic of grasses and grass-like plants.

### **3.2.6 Cultural Resources**

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources.

#### *3.2.6.1 Architectural*

Fairchild AFB conducted three building inventories (Fairchild AFB 2012b) and determined Building 2245 (Base Personnel/Finance) and the Flight Line Historic District (consisting of 17 individual buildings: 1001, 1003, 1005, 1007, 1009, 1011, 1012, 1013, 1015, 1017, 1019, 1021, 1023, 1024, 1025, 1026, and 2050) are eligible for listing on the NRHP. The Washington SHPO has concurred with this determination. The Washington SHPO [Department of Archeology and Historic Preservation (DAHP)] also considers Building 2025 (Snow Barn) eligible for listing on the NRHP. In November 2012, the 92 ARW Commander, the DAHP, and the Spokane City/County Historic Preservation Office signed a Memorandum of Agreement (MOA) allowing Fairchild AFB to demolish buildings within the Flight Line Historic District if mitigation measures stated in the MOA are completed prior to demolition.

#### *3.2.6.2 Archaeological*

Three archaeological surveys have been conducted on Fairchild AFB. Those surveys have resulted in the documentation of three historic archaeological sites (Fairchild AFB 2012b). In 1998, a historic well was discovered and evaluated by the Spokane County Historic Preservation Office; it was not considered eligible for the NRHP (Fairchild AFB 2012b). There are no NRHP-eligible archaeological resources on Fairchild AFB.

#### *3.2.6.3 Traditional*

Fairchild AFB has identified four tribes typically consulted with as part of the NEPA and Section 106 processes. This list of tribes is contained in Table A-1 in Volume II, Appendix A, Section A.3. There are no known tribal sacred sites or properties of traditional religious and cultural importance in the vicinity of Fairchild AFB.

### **3.2.7 Land Use**

Fairchild AFB is located in Spokane County, Washington, about 12 miles west of the City of Spokane. Land use immediately surrounding Fairchild AFB is predominantly agricultural and grazing.

#### *3.2.7.1 Base*

The base is currently updating its Installation Development Plan (IDP), which includes a long-range development plan and describes physical development on the base, with the layout of functional areas and land uses. About half of the base is dedicated to the airfield (centered around one southwest-northeast runway alignment). Industrial functions, recreational areas, community support functions, open space, and housing areas occupy much of the remainder of the base, on the north side of the airfield. The munitions storage activity and Survival, Evasion, Resistance and Escape (SERE) training complex are located on the south side of the base.

The USAF has restrictive easements on privately and publicly owned land adjacent to Fairchild AFB within the CZs to protect against incompatible uses. Airfield operations and base land use are compatible with adjacent land uses and do not have any notable compatibility issues either internally or outside the boundary. Future development on the base is likely to consolidate and upgrade current functions and not change the existing basic organization of land uses (USAF 2013c).

#### *3.2.7.2 Surrounding Areas*

As shown on Figure 3-2, the land bordering Fairchild AFB is not urbanized and consists of large-lot residential uses and resource-based industries, including ranching, farming, and mining operations. The predominant land use within the unincorporated areas surrounding the base is agriculture, with vast areas west and southeast of the base devoted to grain production or maintained as open range land. Very low-density residential development occurs, with minimum lot sizes of 3 to 10 acres on the south, west, and north sides of the base.

The City of Airway Heights is located about 1 mile to the northeast and is bisected by U.S. Highway 2, while the City of Medical Lake is located about 1.5 miles to the south. Spokane International Airport is located to the east in a light industrial area. The City of Airway Heights is composed of a variety of land uses, with industrial areas located closest to the base. Land between Airway Heights and the base boundary is mostly open and is zoned for agriculture and some industrial uses.

The City of Medical Lake contains considerable amounts of residential and public land uses. Most of the residences, commercial uses, schools, and city offices are in the northeastern portion of the city, while the state institutions are to the west and southwest. Medical Lake is not within the Fairchild AFB noise contours. However, land use and development issues within its jurisdiction are important due to the community's proximity to the base. While development around the City of Medical Lake has historically expanded on the north side of the community toward the base, a recent urban growth update limited further northward expansion and provided eastward opportunities instead (Spokane County 2013).

The West Plains Property, located approximately two miles from Fairchild AFB, is owned by the U.S. government and held in trust for the Spokane Tribe of Indians. The 145-acre parcel contains a retail fuel and convenience store and is the site of a planned mixed-use development.

Based on review of the existing noise contours, it is estimated that the off-base area affected by noise levels of 65 dB DNL or greater is 1,672 acres. An evaluation of aerial imagery shows few structures in this footprint outside the base, and no residential-type structures.

Spokane County has experienced steady population growth mostly due to consistent growth in its diverse industrial and commercial economic base. The population of Spokane County has grown 65 percent between 1960 and 2008. Extensive residential, commercial, and industrial uses have grown near the base over the past 15 years as a result of a shift in urban density population and economic activity to semi-rural areas. Population growth of the Spokane area is projected to continue, with the area attracting an estimated 87,000 additional residents by 2030 (State of Washington 2012).

Compatibility planning has been on the forefront for the area around Fairchild AFB since it was built in 1942. The USAF provides land use recommendations and guidelines for compatible use to local jurisdiction through the AICUZ program. Fairchild AFB prepared an AICUZ study for the KC-135 operations in 2005, and updated the study in 2007 (USAF 2007a). This study identified incompatible residential and public use lands within the Northern APZ II.

A JLUS was completed September 2009 by Spokane County to provide further assistance with defining appropriate strategies for community planning around Fairchild AFB. Spokane County has developed and implemented AOZs to reduce the potential for airport hazards at four airports in the county, including Fairchild AFB. This is particularly relevant due to the proximity of Spokane International Airport and its associated air traffic and noise. The AOZ program is similar in design and intent to DoD's AICUZ program. Zoning in surrounding municipalities of Airway Heights, City of Spokane, and Spokane County is generally compatible with the base's mission. They have all adopted some level of protection from incompatible development in their zoning regulations to guide compatible development around the base. The Spokane Tribe of Indians also participated in the JLUS process and has coordinated with the USAF on compatible development at the West Plains Property. The Spokane Tribe of Indians enacted the West Plains Development Code to implement the recommendations of the JLUS, including building heights, density, sound attenuation, wildlife attractants, light and glare.

### **3.2.8 Infrastructure**

#### **3.2.8.1 Potable Water System**

Potable water is provided to Fairchild AFB by the Fort George Wright Annex, located northeast of Spokane International Airport. The wells tap into groundwater from both the Spokane Valley-Rathdrum Prairie Aquifer and the Latah (Hangman) Creek Aquifer and feed the Geiger Reservoir. There are five pumps at the complex that have a total actual capacity of 4,420 GPM (6.4 MGD). Fairchild AFB has a total of 2.16 million gallons (MG) of water storage capacity (0.51 MG at Geiger Reservoir and 1.65 MG in five tanks on base). If water demand is not met by the Fort George Wright well complex, there are two backup groundwater sources for potable water supply (Well 2 and an intertie with the City of Spokane) that could supply an additional 4.6 MGD (Well 2 – 1 MGD and intertie – 3.6 MGD) of potable water, for a total amount of 11 MGD available to the base. Potable water consumption in 2012 averaged a daily demand of 1.73 MGD and a peak demand of 4.82 MGD (USAF 2013d). This average daily use amounted to 16 percent of base water system capacity (including backup sources) and 44 percent of base capacity (including backup sources) at peak daily demand.

#### **3.2.8.2 Wastewater**

The sanitary sewer system is only composed of a collection system (USAF 2010b). The Spokane Wastewater Management Department treats the majority of the wastewater from the base at the Riverside Park Water Reclamation Facility (RPWRF). The only exception is the three mounded drain field systems Fairchild AFB operates and maintains on the south side of the base. The

RPWRF is located on the east bank of the Spokane River, can treat up to 44 MGD, and currently processes 28–30 MGD of sewage, which is approximately 68.2 percent of capacity (Coster 2013). Discharge from the RPWRF into the Spokane River must meet the city’s NPDES permit.

The overall condition of the sanitary sewer system is considered adequate for current mission requirements (USAF 2010b). Recent sanitary surveys of the system have identified a number of inflow and infiltration (I&I) issues that require attention. A series of projects to upgrade the system are underway and will reduce historical levels of I&I by 80 percent. The wastewater collection system at Fairchild AFB has a capacity of 1.8 MGD (USAF 2012a). In 2012, daily discharges from the base averaged 0.68 MGD and peaked in March and April at 1.254 MGD (USAF 2012a). This average daily discharge was approximately 39 percent of the base system capacity and 70 percent at peak daily discharge.

#### *3.2.8.3 Stormwater System*

The details of the stormwater drainage system for Fairchild AFB are contained in the SWPPP (Fairchild AFB 2008a). The stormwater conveyance system covers the central portion of the base and flightline. The southern portion of the base drains into a conveyance system serving the SERE School campus. The remainder of the developed area of the base drains via sheet flow into open drainage ditches. The details of the stormwater permit for Fairchild AFB are described in Section 3.2.4.2.1. The permit does not, however, authorize stormwater discharges associated with construction activities. A separate Notice of Intent and SWPPP must be filed for all new construction activities that disturb 1 or more acre.

#### *3.2.8.4 Electrical System*

The Bonneville Power Administration, through Avista Utilities, provides electrical service to Fairchild AFB through two substations (north and south). Historic load data from October 2001 to September 2002 show a maximum peak loading of about 10.8 megawatts during the summer. Winter peak loading is slightly lower than summer peak loading. Average daily electric demand for this same period was 180 MWH per day based on annual demand of 65,700 MWH. The north and south substations have the capability to provide redundant power for the entire base with the exception of limited “load shedding” of non-critical mission requirements during peak loading periods. There are projects programmed to increase the size of the north substation and increase electrical conductor sizes at critical points to eliminate load shedding for redundant capability. In 2010, the Fairchild AFB electrical system was rated as “adequate.” In addition, the base has adequate backup power systems to support priority facilities as outlined in the base Contingency Response Plan (USAF 2003a).

#### *3.2.8.5 Natural Gas System*

The natural gas system at Fairchild AFB has been privatized and is supplied by Avista Utilities through natural gas lines that are owned by two different contractors, Honeywell and Avista. The natural gas piping that was installed under the Honeywell Energy Saving Performance Contract will be conveyed to Avista Utilities in the near future. The natural gas system is considered adequate to meet current mission requirements (USAF 2012b). The natural gas system does not represent a constraint to the future development on Fairchild AFB.

#### *3.2.8.6 Solid Waste Management*

All municipal solid waste and C&D waste generated at Fairchild AFB is collected and transported off base by a local qualified contractor. Depending on the type of solid waste, waste is either taken to the Spokane Regional Waste to Energy Facility or the Graham Road Landfill. With a disposal

area of approximately 300 acres, the landfill accepts approximately 122,000 tons of solid waste annually and has a projected remaining life of 103 years (Waste Management 2013). Fairchild AFB also has a very active recycling program. C&D contractors are required to recycle C&D debris to the maximum extent practicable to ensure that Fairchild AFB meets the DoD goal of a 60 percent C&D diversion rate by 2015. All non-recyclable C&D waste is collected in a dumpster until removal. C&D waste contaminated with hazardous waste, ACM, LBP, or other undesirable components is managed in accordance with AFI 32-7042 and AFI 32-7086 (USAF 2012c).

#### *3.2.8.7 Transportation*

Regional access to Fairchild AFB is provided by I-90, U.S. Highway 2 (U.S. 2), and State Highway 902. Figure 2-8 displays the primary routes and regional transportation network in the vicinity of Fairchild AFB. I-90 extends east-west and is located approximately 2 miles from the southern boundary of the base. U.S. 2 extends east-west through the length of Washington State, entering from Idaho to the east and continuing through the state until the City of Everett, near the Puget Sound. At the entry point for Fairchild AFB, U.S. 2 had an average daily traffic volume of 16,000 vehicles per day (WA DOT 2013). At points just to the east and west of the exit for U.S. 2, I-90 has average daily traffic volumes of approximately 67,000 and 36,000 vehicles per day, respectively (WA DOT 2013). Highway 902 follows along Fairchild's southernmost boundary and provides residents of Medical Lake easy access to the Thorpe/Rambo Gate during the morning and evening rush hours.

Though there is not a direct link to Fairchild AFB, Burlington Northern Santa Fe Railway operates a rail line that passes just outside the northwest boundary of the base. Amtrak provides regional passenger rail service by way of the Empire Builder line, with a stop in Spokane. Regional bus service is provided by Greyhound with a stop in Spokane, in proximity to the train station. Spokane Transit Authority provides public transportation within the City of Spokane and includes stops at the Spokane International Airport, the Main Gate at Fairchild AFB, and the base Exchange/Commissary (Spokane Transit Authority 2013). Commercial airline service is available at Spokane International Airport with access to seven national and regional carriers.

##### *3.2.8.7.1 Gate Access*

Vehicle access to the base is provided through three primary gates: the Main Gate, Rambo Gate, and Thorpe Gate. The Main Gate is located at the northern end of the base on Mitchell Street just off of U.S. 2 and is open 24 hours daily. The Rambo Gate is located on the east side of the base on South Rambo Road and is only for commercial vehicles and ID card holders (6:00 A.M. to 8:00 A.M. [inbound only] and 4:00 P.M. to 6:00 P.M. [outbound only]). Rambo Gate is manned from 6:00 A.M. to 6:00 P.M. Monday through Friday and is closed on holidays. Thorpe Gate is located on the southeastern part of the base and serves personnel working in the southern part of the base, as well as personnel living in off-base communities, such as the cities of Cheney and Medical Lake. Thorpe Gate is open 6:00 A.M. to 8:00 A.M. (inbound only) and 4:00 P.M. to 6:00 P.M. (outbound only) Monday through Friday for ID card holders only. McFarland Gate and Graham Gate are located on the west side of the base but are only used as contingency gates. Welcome Road and Bartholomew Road gates are on unimproved base roads but can provide ingress/egress in an emergency (Fairchild AFB 2010a).

##### *3.2.8.7.2 On-Base Traffic Circulation*

The roads on Fairchild AFB meet the base's needs (Fairchild AFB 2010a). The primary arterial roads moving traffic onto and off of the base are Mitchell Drive, Bong Street, and Fairchild Highway. All other roads feed into these two primary roads. The main secondary roads

include Strategic Air Command Boulevard, West Castle Street, Arnold Street, and O'Malley Avenue. Under normal conditions, the roads serving Fairchild AFB adequately handle traffic loads. Two areas that require attention are the Main Gate and the intersection of Poplar Street at Mitchell Drive. The intersection does not flow well during the afternoon peak travel time due to traffic exiting from family housing and traffic departing the base. There is no control device at the intersection, and traffic on Poplar Street must wait for breaks in traffic along Mitchell Drive (USAF 2012b). In 2008, a traffic circulation study was conducted for the base. For the Poplar Street and Mitchell Drive intersection, the study recommended restricting flow to right in/right out only on Poplar Street. As for the Main Gate, there are no calming lanes on the outbound side. Under normal security levels, the gate operates at an acceptable level. However, when threat conditions are raised, jersey barriers are put in a serpentine pattern in the outbound lane to prevent incursion from off-base threats. Traffic backups do occur, filling up the outbound lane. Calming lanes on the outbound side have been identified as a potential solution to alleviate this problem.

### **3.2.9 Hazardous Materials and Waste**

#### **3.2.9.1 Hazardous Materials**

Hazardous materials used by USAF and contractor personnel at Fairchild AFB are managed in accordance with HMMP and controlled through three HAZMARTs (Fairchild AFB 2012c) that are part of the Fairchild AFB P2 program. The HMMP serves as the governing policy for how base maintenance shops acquire, track, and dispose of hazardous materials, along with preventing, preparing for, and responding to the potential small-scale release of hazardous materials.

The three HAZMARTs on Fairchild include (1) the primary HAZMART operated under a no-cost contract with Envision, (2) the Government-Operated Civil Engineer Supply Store, and (3) the Medical Group, Medical Logistics Supply. As part of the overall P2 program, the HAZMARTs provide centralized management of the procurement, handling, storage, and issuance of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials (Fairchild AFB 2008b). Proper hazardous materials management will minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal.

##### **3.2.9.1.1 Aboveground and Underground Storage Tanks**

Because the USEPA made a determination, in the form of a letter, that there are no pathways for an oil spill to potentially reach navigable water or other sensitive areas as listed in 40 CFR 112, an SPCC Plan or FRP is not required for Fairchild AFB (USEPA 1997). The Comprehensive Emergency Management Plan (CEMP) addresses roles, responsibilities, and response actions for all major accidents, including major spills (Fairchild AFB 2010b).

Fairchild AFB has seven ASTs with capacities greater than 10,000 gallons. These ASTs are located at the bulk fuel storage area and are used to store Jet-A (with additives) (JAA) and aircraft deicing chemicals. Fairchild AFB also manages 23 USTs. The total JAA storage capacity at Fairchild AFB is approximately 4,600,000 gallons (Fairchild AFB 2008a). Fairchild AFB used approximately 14,900,000 gallons of JAA in 2012. Fairchild AFB receives fuel through a commercial pipeline and commercial tank truck. JAA is delivered to the flightline through two Type III hydrant-refueling systems (Fairchild AFB 2010b).

### 3.2.9.1.2 Toxic Substances

The Asbestos Management Plan establishes management responsibilities, procedures, and details regarding how the base will carry out ACM-related work (Fairchild AFB 2011a). The elements of any ACM abatement work are survey, notification, personnel training, work practices/control of emissions, disposal, and record keeping. The CE squadron maintains a permanent file documenting asbestos activities. All proposed facility construction, repair, maintenance, demolition, and renovation or self-help projects will be reviewed, to the extent possible, to identify the presence of ACM prior to work beginning. Work on ACM projects will only be performed by individuals with current certificates of training in accordance with OSHA and USEPA standards. The Spokane Regional Clean Air Agency administers the asbestos program in Spokane County (SRCAA 2013a). For any project on base, ACM wastes are removed by the contractor and handled and disposed of in accordance with Federal, state, and local regulations at a waste disposal site authorized to accept such waste.

The Fairchild AFB Lead Exposure and Lead-Based Paint Management Plan is designed to establish management responsibilities and procedures for identifying and controlling hazards related to the presence of LBP (Fairchild AFB 2011b). The plan establishes and describes the organizational roles and responsibilities, program development, management actions, data management, and training. LBP surveys are conducted by contractors prior to any renovation or demolition projects at pre-1980 facilities at Fairchild AFB. The base complies with all Federal, state, and local requirements regarding LBP, LBP activities, and LBP hazards.

A PCB survey was completed at Fairchild AFB; the only remaining PCBs are potentially in fluorescent light ballasts in structures constructed prior to 1979 (Potter 2013).

Based on the results of the Radon Assessment and Mitigation Program of 1987, Fairchild AFB has been determined to be at a medium risk for indoor radon levels and is subject to the applicable requirements outlined in AFI 48-148, Ionizing Radiation Protection.

### 3.2.9.2 *Hazardous Waste Management*

Fairchild AFB is classified as an LQG. Typical hazardous wastes generated during operations and maintenance activities include flammable solvents, contaminated fuels and lubricants, paint/coating, stripping chemicals, waste oils, waste paint-related materials, and other miscellaneous wastes.

Hazardous wastes at Fairchild AFB are managed in accordance with the Hazardous Waste Management Plan (Fairchild AFB 2011c). This plan covers the control and management of hazardous wastes from the point the material becomes a hazardous waste to the point of ultimate disposal, as required by Federal and state laws and regulations. In 2012, the base generated approximately 31,000 pounds of hazardous waste, which was disposed of at off-base permitted disposal facilities.

### 3.2.9.3 *Environmental Restoration Program*

There are 89 ERP sites and two areas of concern at Fairchild AFB that are administered in accordance with the Management Action Plan. The Management Action Plan describes the integrated, coordinated approach of conducting the ERP activities required (Fairchild AFB 2013). Environmental response actions are planned and executed under the ERP in a manner consistent with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and other applicable laws. Fairchild AFB was listed on USEPA's National Priorities List in March of 1989.

### 3.2.10 Socioeconomics

Socioeconomics refers to features or characteristics of the social and economic environment. The main concern for socioeconomic resources is the change in personnel at Fairchild AFB associated with the KC-46A MOB 1 scenario that could potentially impact population, employment, earnings, housing, education, and public services. Spokane County, Washington, is the ROI for this analysis.

#### 3.2.10.1 Baseline Conditions

##### 3.2.10.1.1 Population

In 2010, the population of Spokane County totaled 471,221 persons (U.S. Census 2010d). Between 2000 and 2010, the ROI population increased at an average annual rate of 1.2 percent, with a total increase of approximately 53,282 persons (U.S. Census 2000d, 2010d). The City of Spokane, the most populated city in Spokane County and the county seat, experienced an annual 0.7 percent increase over the 10-year period (U.S. Census 2000e, 2010e). The population in Washington totaled 6,724,540 persons in 2010, and increased at an average annual growth rate of 1.3 percent between 2000 and 2010 (U.S. Census 2000f, 2010f) (see Table 3-16).

**Table 3-16. Population for the City of Spokane, Spokane County, and Washington**

Location	2000	2010	Annual Percent Change (2000–2010)
City of Spokane	195,629	208,916	0.7%
Spokane County	417,939	471,221	1.2%
Washington	5,894,121	6,724,540	1.3%

*Source:* U.S. Census 2000d, 2000e, 2000f, 2010d, 2010e, 2010f.

As shown in Table 2-10, Fairchild AFB has a total work force of 4,486. This includes 3,334 full-time military personnel, 531 DoD civilians, and 621 other base personnel. In addition, there are 3,906 military dependents and family members associated with the full-time military personnel. Approximately 1,947 part-time Guardsmen are also located at Fairchild AFB, but because they are not considered full-time, they were not considered part of the work force for this analysis.

##### 3.2.10.1.2 Economic Activity (Employment and Earnings)

In 2011, the most recent data available, employment in Spokane County totaled 264,706 jobs (BEA 2012). The largest employment sectors in Spokane County were government (14.9 percent), followed by health care and social assistance (14.4 percent) and retail trade (11.6 percent) (BEA 2012). Construction accounted for 5 percent of total employment. In 2012, the unemployment rate in Spokane County was 8.6 percent (BLS 2013a). The county unemployment rate was higher than the state (8.2 percent) and the Nation (8.1 percent) (BLS 2013b). As of April 2013, the monthly unemployment rate (not seasonally adjusted) for Spokane County was estimated at 7.5 percent (BLS 2013c).

Fairchild AFB is an important contributor to the Spokane County economy through employment of military and civilian personnel and expenditures for goods and services. The total economic impact of the base on the surrounding communities between October 2011 and September 2012 was \$461,312,652. The payroll for military, DoD civilians, and other base personnel was \$226,010,439. An estimated \$23,540,250 worth of MILCON also occurred on base in 2011 (Fairchild AFB 2011d).

### 3.2.10.1.3 Housing

Table 3-17 presents census-derived housing data for the City of Spokane and Spokane County. In 2010, Spokane County had 201,434 total housing units, of which 7.1 percent (14,267 units) were vacant (U.S. Census 2010d). Approximately 47 percent of the total housing units located in Spokane County are within the City of Spokane. Of those housing units in the city, approximately 7.4 percent (7,020) were vacant at the time of the 2010 Census (U.S. Census 2010e). Of the vacant housing units in the city and county, almost half were available for rent.

**Table 3-17. Housing Data for the City of Spokane and Spokane County**

Location	Housing Units	Occupied	Vacant	For Rent
City of Spokane	94,291	87,271	7,020	3,277
Spokane County	201,434	187,167	14,267	6,047

Source: U.S. Census 2010d, 2010e.

There are three housing options available at Fairchild AFB: privatized housing, unaccompanied housing, and housing in the local community. Military family housing at Fairchild AFB is privatized and owned by Balfour Beatty Communities. There are four neighborhoods with a total of 641 single-family homes on Fairchild AFB, with a current occupancy rate of 97 percent (USAF 2013e).

There are 10 dormitories with a total of 472 dormitory units for unaccompanied Airmen in the rank of E-1 to E-4 with less than 3 years of service on Fairchild AFB (USAF 2013e). Housing in the local community is available for unaccompanied Airmen in the ranks of E-4 with 3 or more years of service.

### 3.2.10.1.4 Education

Spokane County is located in Educational Service District 101. There are 289 school districts within Educational Service District 101. Spokane County includes parts of, or all of, 18 different school districts. There are five school districts located in the City of Spokane. The Spokane Public School District is the largest school district in eastern Washington and the second largest in Washington, with 34 elementary schools, six middle schools, and five high schools. Total enrollment in the Spokane Public School District during the 2012–2013 school year was approximately 29,275 students and 1,758 classroom teachers, for a student-to-teacher ratio of 16.6:1 (Spokane District Schools 2013). The average class size for general education, as defined by the Washington State Legislature, is 25.23 for kindergarten through third grade, and ranges from 27–28.7 for fourth grade and up (Washington State Legislature 2011).

There is one elementary school located on the base. The Michael Anderson Elementary School is for children in pre-kindergarten through fifth grade and is part of the Medical Lake School District. There are three elementary schools, one middle school, one high school, and one alternative high school in the district. As of May 2012, there were 1,916 students enrolled in the district and 110 classroom teachers, for a student-to-teacher ratio of 17.4:1 (OSPI 2012). During the same time, there were 436 students enrolled in Michael Anderson Elementary School and 28 classroom teachers, for a student-to-teacher ratio of 15.6:1 (OSPI 2012).

### 3.2.10.1.5 Public Services

Public services in Spokane County include law enforcement, fire protection, emergency medical services, and medical services. The Spokane County Sheriff's Department provides law enforcement services for the county and employs approximately 242 officers (Spokane County 2007). In addition to the Sheriff's Department, there are numerous law enforcement agencies in the area.

Spokane County has 7 municipal fire departments and 11 fire districts that provide service to the county. Spokane Emergency Management provides emergency management services for all cities, towns, and unincorporated areas in Spokane County (Spokane County 2012). The closest emergency rooms are at Providence Sacred Heart Medical Center and Deaconess Medical Center, both about 20 minutes away in Spokane.

#### 3.2.10.1.6 Base Services

The 92nd Medical Group is an outpatient clinic that offers a dedicated primary care team approach to help prevent illness, treat injuries, and promote healthy lifestyle changes for more than 11,000 beneficiaries, including active-duty members, retirees, and their families.

Other base services include dining facilities, recreation and fitness centers, and youth and family services. Dining facilities include the Roger A. Ross and Warrior Dining Facilities. Recreation facilities include an aquatic center, bowling lanes, and a fitness center. Youth and family services on base include a CDC, family child care, a youth center, a preteen center, and a teen center. The CDC serves over 200 children six weeks old through kindergarten (92nd FSS 2013).

### 3.2.11 Environmental Justice and the Protection of Children

Spokane County, Washington, represents the region of comparison for evaluating disproportionate effects (in Chapter 4) on populations of concern for environmental justice and for children. Table 3-18 shows that the proportion of minority persons in Spokane County is much lower than the State of Washington and the Nation as a whole. Low-income persons compose a slightly higher proportion of the county's population than in the State of Washington, but the county's proportion is typical of the Nation's. The proportion of children in the county population is similar to that in the State of Washington and the Nation.

**Table 3-18. Characterization of Environmental Justice Populations for Fairchild AFB**

Location	Total Population	Minority		Low-Income <sup>a</sup>	Youth	
		Number	Percent	Percent	Number	Percent
Spokane County	471,221	62,592	13.28%	14.40%	109,502	23.24%
Washington	6,724,540	1,847,736	27.48%	12.50%	1,581,354	23.52%
United States	308,745,538	111,927,986	36.25%	14.30%	74,181,467	24.03%

<sup>a</sup> 2007–2011 estimate; all other values based on 2010 census.

Source: U.S. Census 2010d, 2010f, 2012.

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### 3.3 GRAND FORKS AIR FORCE BASE

This section of Chapter 3 describes the baseline conditions of the environmental resources anticipated to be affected by implementation of the KC-46A MOB 1 scenario at Grand Forks AFB and, when applicable, in areas surrounding the base. The baseline resource conditions are described to the level of detail necessary to support analysis of the potential impacts that could result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB.

#### 3.3.1 Noise

Noise, which is defined as unwanted sound, has the potential to affect several resource areas evaluated in this Final EIS. Background information on the regulatory setting and methodology for noise is contained in Volume II, Appendix B, Sections B.1.2 and B.1.3.

##### 3.3.1.1 Base-Affected Environment

The current mission at Grand Forks AFB is described in Section 2.4.3 and includes the Predator, Predator B, and Global Hawk remotely piloted aircraft (RPA). Table 3-19 shows noise levels of the aircraft currently based at Grand Forks AFB at different heights above the ground during landings and takeoffs. Aircraft flying at higher altitudes may have slightly lower noise levels than shown in Table 3-19 because flaps and gear may not be deployed as they would when in landing or takeoff configurations. The noise levels in this table are presented as SELs (in dB), which are the sum of sound energy during the noise event.

**Table 3-19. Aircraft Noise Levels at Grand Forks AFB**

Aircraft	Power Setting	SEL at Overflight Distance (in dB)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
Predator (MQ-1)	50% RPM	77	73	68	63	56	49
Predator B (MQ-9)	50% RPM	82	78	73	68	60	53
Global Hawk (RQ-4)	87% RPM	101	97	92	86	78	70
Takeoff							
Predator (MQ-1)	100% RPM	87	82	78	72	65	58
Predator B (MQ-9)	100% RPM	85	81	76	72	65	58
Global Hawk (RQ-4)	100% RPM	117	113	108	102	93	85

**Note:** Aircraft airspeed is 160 knots. Aircraft operate at various airspeeds in and around the airfield.

**Key:** Power Unit: RPM – revolutions per minute

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results; T-41 used as surrogate noise source for MQ-1; Cessna 441 used as surrogate noise source for MQ-9 (noise reduced 3 dB to account for one TPE331 engine on MQ-9 rather than two on Cessna 441); T-45 used as surrogate noise source for RQ-4.

Of the 14,946 annual operations conducted at Grand Forks AFB, 24 percent occur at night between 10:00 P.M. and 7:00 A.M. Due to the potential for night noise to be particularly intrusive, noise events occurring during this time period are assessed a 10 dB penalty when calculating DNL.

Figure 3-3 shows noise contours reflecting current operations at Grand Forks AFB that were calculated using NOISEMAP (Version 7.2). As a point of reference, Figure 3-3 also shows the 65 dB DNL noise contours published in the 2010 EIS for the BRAC Beddown and Flight Operations of Remotely Piloted Aircraft at Grand Forks AFB (USAF 2010c).

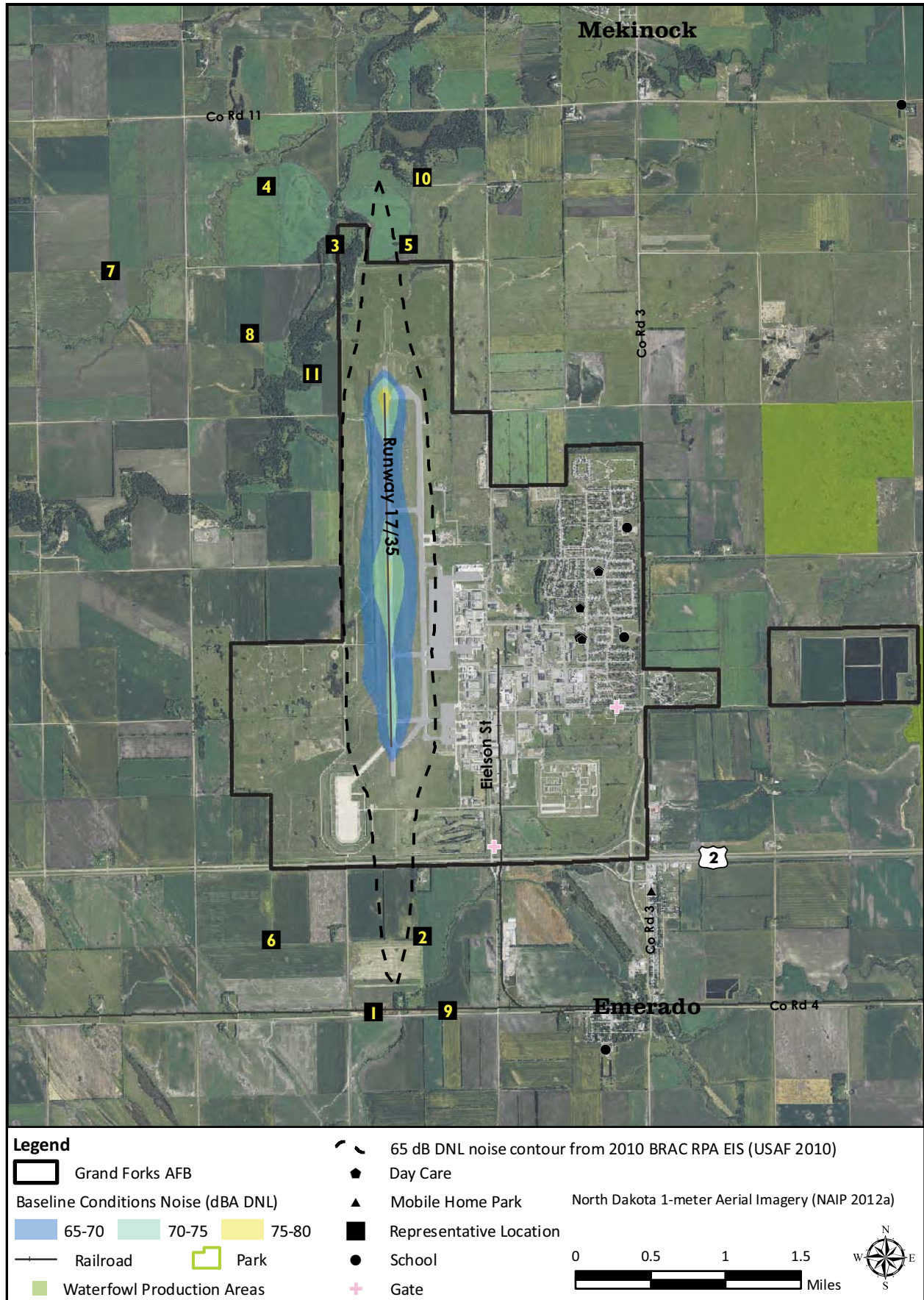


Figure 3-3. Grand Forks AFB Baseline Noise Contours

Differences between baseline noise contours and those published in the 2010 EIS are a result of an update of operations data and changes in noise modeling methods. Operations data were updated based on interviews with pilots, maintainers, and air traffic control personnel in March 2013. Noise contours included in the 2010 EIS were calculated using NOISEMAP in conjunction with the program Integrated Noise Model (INM). To maintain consistency of methods, baseline noise levels were calculated using NOISEMAP. Baseline noise levels were also calculated accounting for the effects of local terrain (e.g., hills and valleys) and ground impedance (e.g., grass absorbs sound energy to a greater degree than water).

Table 3-20 shows that no land or off-base residents are exposed to noise greater than 65 dB DNL. It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed, and this has been accepted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.3.7 and Volume II, Appendix C, Section C.1.3.1). Per DoD policy, the 80 dB DNL noise contour is used to identify populations most at risk of potential hearing loss (USD 2009). If no residence or populated area is within the 80 dB DNL contour, then no further risk assessment is warranted. Aircraft noise levels of 80 dB DNL or greater do not occur at Grand Forks AFB under current conditions. The risk of hearing loss among workers at Grand Forks AFB is assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

**Table 3-20. Population and Acreage Affected Under Noise Contours Near Grand Forks AFB, Baseline Conditions**

Noise Level (dB DNL)	Baseline Conditions		
	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	0	0	341
70–74	0	0	114
75–79	0	0	10
80–84	0	0	0
≥85	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>465</b>

*Note:* Population estimates were made based on 2010 U.S. Census Bureau data. The number of persons currently residing in affected areas may differ from what has been stated.

Table 3-21 presents noise conditions at several representative locations in the area surrounding Grand Forks AFB. The representative locations depicted on Figure 3-3 were established based on central points of U.S. Census subdivisions, and therefore do not represent a specific noise-sensitive receptor. The areas in the vicinity of the representative locations are expected to experience similar aircraft noise levels. None of the 11 locations studied experience noise levels greater than 65 dB DNL. At the locations surveyed, based Global Hawk departure and pattern operations and transient aircraft (i.e., KC-10A or KC-135) departure operations are the operations types generating the highest SELs. A more detailed description of operations generating the highest SELs can be found in Table C-1-3 in Volume II, Appendix C, Attachment C-1.

In accordance with AFI 13-201, base flying procedures have been designed to minimize impacts on the surrounding community while maximizing operational capacity and flexibility. Grand Forks AFB aircraft should avoid flying over the base housing area below 2,400 feet MSL, with the exception of approved overflights for photos or mosquito spraying, and aircraft should avoid flying over the City of Grand Forks below 5,000 feet MSL. There has not been a noise complaint in the community around Grand Forks AFB in the last 10 years.

**Table 3-21. Grand Forks AFB Representative Locations Under Baseline Conditions**

Location ID	Baseline Conditions	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	53	91–97
2	54	93–97
3	54	90–97
4	49	81–93
5	55	93–98
6	47	80–92
7	46	78–85
8	49	80–93
9	50	87–96
10	53	89–96
11	54	85–97

<sup>a</sup> 'Top 5 SELs' refers to the range of loudest five event types experienced at the location (see Volume II, Appendix C, Attachment C-1).

### 3.3.2 Air Quality

Air emissions produced from construction and operation of the KC-46A aircraft at Grand Forks AFB mainly would affect air quality within Grand Forks County. In North Dakota, the North Dakota Department of Health (NDDH) is responsible for enforcing air pollution regulations. The NDDH uses the NAAQS to regulate air quality within North Dakota and establishes state standards with concentrations that are at least as restrictive as the NAAQS (NDDH 2011). Additional background information on the CAA, the NAAQS, and the North Dakota Ambient Air Quality Standards (NDAAQS) is contained in Volume II, Appendix B, Section B.2. Information on regional climate is contained in Volume II, Appendix D, Section D.3.

The NDDH Division of Air Quality enforces the NAAQS and NDAAQS by monitoring state-wide air quality and developing rules to regulate and permit stationary sources of air emissions. The Air Pollution Control Rules for the State of North Dakota are found in Article 33-15 of the *North Dakota Century Code*, Chapter 23-25. Grand Forks AFB currently operates under a Division of Air Quality Title V permit.

#### 3.3.2.1 Region of Influence and Existing Air Quality

Air emissions produced from construction and operation of the KC-46A aircraft at Grand Forks AFB would primarily affect air quality within Grand Forks County. Due to lack of substantial air emission sources within the region, Grand Forks County is in attainment of the NAAQS and NDAAQS for all pollutants (NDDH 2012a).

##### 3.3.2.1.1 Regional Air Emissions

Table 3-22 summarizes estimates of the annual emissions generated by Grand Forks County in CY 2008 (USEPA 2013a). The majority of emissions within the region occur from (1) on-road and nonroad mobile sources (VOCs, CO, and NO<sub>x</sub>), (2) solvent/surface coating usages (VOCs), and (3) fugitive dust from unpaved roads and agricultural tillage (PM<sub>10</sub>/PM<sub>2.5</sub>).

**Table 3-22. Annual Emissions for Grand Forks County, North Dakota, CY 2008**

Source Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Stationary Sources	7,119	2,564	1,087	647	14,451	2,608	2,141
Mobile Sources	1,083	11,678	2,968	37	219	180	477,022
<b>Total</b>	<b>8,202</b>	<b>14,242</b>	<b>4,054</b>	<b>684</b>	<b>14,670</b>	<b>2,788</b>	<b>479,163</b>

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

**Source:** USEPA 2013a.

### 3.3.2.1.2 Grand Forks AFB Emissions

Operational emissions due to existing operations at Grand Forks AFB occur from (1) RPA operations and engine maintenance/testing, (2) AGE, (3) GMVs and POVs, (4) offsite POV commutes, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and area sources. Table 3-23 summarizes the most recent estimate of annual operational emissions that occurred at Grand Forks AFB (CY 2012). Data needed to calculate existing emissions at Grand Forks AFB were obtained from (1) the project noise analyses for aircraft operations, (2) the *2011 Actual and Potential Air Emissions Inventory for Grand Forks Air Force Base* (Sullivan-Weston Services JVA, LLC 2012), and (3) activity data collected for 2012 operations. Due to missing data, CY 2012 emissions for aircraft engine maintenance/testing, AGE, GMVs, and nonroad equipment were estimated by factoring data used for the 2012 Fairchild AFB emissions inventory. Emission factors used to calculate combustive emissions for the KC-135 aircraft were based on emissions data developed by CFM International for the CFM56-2B1 engine (ICAO 2013a). The data in Table 3-23 also are used to estimate non-aircraft source emissions for the future project scenarios at Grand Forks AFB. Volume II, Appendix D, Section D.3, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from existing sources at Grand Forks AFB.

**Table 3-23. Annual Emissions from Existing Operations at Grand Forks AFB, CY 2012**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
RPA Operations	0.56	2.48	12.73	1.04	0.23	0.23	2,910
Transient Aircraft Operations	0.52	1.90	1.18	0.12	0.29	0.29	199
On-Wing Aircraft Engine Testing – Unmanned Aircraft System	0.17	0.71	0.80	0.10	0.02	0.02	290
Aerospace Ground Support Equipment	0.06	0.44	0.52	0.01	0.07	0.06	63
GMVs/Nonroad Equipment	0.02	0.32	0.42	0.00	0.02	0.02	84
Privately Owned Vehicles – On Base	0.28	9.96	2.56	0.02	0.14	0.09	1,320
Privately Owned Vehicles – Off Base	2.53	82.80	18.66	0.16	1.52	0.91	10,584
Mobile Fuel Transfer Operations	0.04	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	22.39	12.59	16.57	0.10	7.95	1.33	<sup>a</sup>
<b>Total Emissions</b>	<b>37.47</b>	<b>111.21</b>	<b>53.46</b>	<b>1.56</b>	<b>10.24</b>	<b>2.95</b>	<b>15,423</b>

<sup>a</sup> Source does not emit particular pollutant.

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

### 3.3.3 Safety

The safety resource area applies to activities in the air and on the ground associated with aircraft flight and operation. Flight safety considers the aircraft flight risks, including the potential for bird/wildlife-aircraft strike hazard. Ground safety considers issues associated with operations and maintenance activities that support base operations, including fire response. Background information on the regulatory setting and methodology for safety is contained in Volume II, Appendix B, Sections B.3.2 and B.3.3.

#### 3.3.3.1 *Flight Safety*

In 2010, Grand Forks AFB transitioned to the use of RPA within the airfield and airspace environment. Prior to this transition in 2010, Grand Forks AFB hosted the KC-135 mission. There have been no recorded KC-135 accidents in the vicinity of Grand Forks AFB (Hector 2009).

The KC-135 aircraft that were previously stationed at Grand Forks AFB and the future KC-46A have the ability to jettison fuel during emergency situations. Data on historical KC-135 operations show that slightly less than two sorties per thousand resulted in a release of fuel (AMC 2013). The ability to land the KC-46A at a much higher weight than the KC-135 would be expected to reduce the frequency of fuel releases for the KC-46A. As such, it is expected that KC-46A sorties would experience a lower frequency of fuel releases.

It is the policy of the USAF MAJCOMs to follow AFIs or supplement those AFIs that have been established. These policies require that pilots avoid fuel jettison, unless safety of flight dictates immediate jettison. For example, AMC policy, which covers all USAF tanker assets, requires that, whenever possible, any fuel released from an aircraft must occur above 20,000 feet AGL (AMC 2004, 2012). This policy is designed to minimize potential impacts of fuel jettison events.

The main environmental concern from fuel released from an aircraft is the deposition of fuel onto the ground and/or surface waters and subsequent negative impact on human health or natural resources. The results of a definitive study on the fate of jettisoned fuel from large USAF aircraft (e.g., KC-135) (Deepti 2003) were used to identify a reasonably conservative ground-level fuel deposition value for the KC-46A. This study used the Fuel Jettison Simulation model developed by the USAF to estimate the ground deposition of fuel from jettison events (Teske and Curbishley 2000). This maximum ground-level fuel deposition value identified for the KC-46A would result in effects that are well below known natural resource and human health thresholds for jet fuel. Therefore, the maximum fuel deposition value expected from the KC-46A would not produce substantial impacts on human health or natural resources. In view of this, no further analysis is included in this section.

##### 3.3.3.1.1 Wildlife Strike Hazard at Grand Forks AFB and Vicinity

Cliff swallows are generally considered the most problematic bird species at Grand Forks AFB. The abundant mud nests built on the sides of hangars and other base buildings cause problematic aircraft operations. Cliff swallows are agile and graceful aerial predators of insects. Under the rules of the annual Grand Forks AFB Federal Fish and Wildlife Permit issued by the USFWS Migratory Bird Permit Office in Denver, Colorado, cliff and barn swallow nests and adults may be destroyed. The taking of birds only occurs when absolutely necessary for safety and health reasons along the flightline. Only birds listed on the Federal Fish and Wildlife Permit may be taken. Flight restrictions for takeoffs and landings, administered by the BASH working group, are implemented when necessary to protect pilots and aircraft during peak bird migration (Grand Forks AFB 2011a).

### *3.3.3.2 Ground Safety*

Grand Forks AFB maintains one runway (RW 17-35). The most current APZ and CZ delineation is based upon legacy aircraft previously stationed at Grand Forks AFB (KC-135). Therefore, the CZs at Grand Forks AFB are established at 3,000 feet wide by 3,000 feet long. APZ I is 3,000 feet wide by 5,000 feet long, and APZ II is 3,000 feet wide by 7,000 feet long. These are very conservative with regard to the current RPA mission, but are suitable for other aircraft that may use the runway. There is no incompatible development projected and no existing incompatible development within the CZ or APZ.

The USAF fire department provides fire and crash response at Grand Forks AFB. The department is also part of mutual-aid agreements with the local fire departments, thus ensuring availability of additional support if required.

## **3.3.4 Soils and Water**

### *3.3.4.1 Soil Resources*

Grand Forks AFB is located in the Central Lowland physiographic province in the North Valley of the Red River. Soil underlying the base is primarily of the Antler-Gilby-Svea, Bearden-Antler, and Glyndon-Gardena associations. The soil of these associations is deep, level to nearly level, and somewhat poorly drained to moderately well-drained, characterized by a high shrink-swell potential, low infiltration rate, and high available water capacity (Grand Forks AFB 2011a).

### *3.3.4.2 Water Resources*

#### *3.3.4.2.1 Surface Water*

Grand Forks AFB is located within the Red River Basin. Surface water features located in the vicinity of the base are the Turtle River and Kellys Slough National Wildlife Refuges (NWRs). The Turtle River flows in a northeasterly direction across the northwest corner of the base. It joins the Red River approximately 25 miles northeast of the base.

Underground concrete pipes and catchment basins collect stormwater run-off from the base. Run-off is conveyed through four grassy drainage ditch outfalls. Several drainage ditches are equipped with control devices capable of handling accidental spills by containing the affected waters until the appropriate treatment has been made (Grand Forks AFB 2011a). Discharges from the west and northwest ditches flow into the Turtle River. Discharges from east of the base, via the south and north ditches, flow into Kellys Slough NWR and, subsequently, the Turtle River. As the Turtle River merges with the Red River northeast of the base, all drainage from the base ultimately flows into the Red River.

To manage stormwater run-off and to protect the quality of surface water on base and in the vicinity of the base, Grand Forks AFB has been issued an NPDES general stormwater permit. As part of this permit, the base analyzes stormwater samples for all permit-required parameters. Stormwater discharges have historically been in compliance with permit requirements.

#### *3.3.4.2.2 Groundwater*

The Emerado and Dakota Aquifers occur under Grand Forks AFB 50–200 feet below the ground. The principal aquifer is the Dakota Aquifer, which is a widespread aquifer extending across much of the central North American continent. Water from this aquifer is highly saline; contains excessive iron, chloride, total dissolved solids, and sulfate; and is generally unsatisfactory for domestic and most industrial uses (Kelly and Paulson 1970).

#### 3.3.4.2.3 Floodplains

The 100-year floodplain of the Turtle River is located in the northwest corner of the base. A portion of the 100-year floodplain of a tributary to Kellys Slough is located in the southeast corner of the base near the sewage lagoons.

### 3.3.5 Biological Resources

#### 3.3.5.1 Vegetation

Historically, tall and mixed grass prairie dominated the land associated with and surrounding Grand Forks AFB (Grand Forks AFB 2011a). Trees and shrubs were limited in this region, although woodland patches were present in stream valleys and other depressions. Today, native grass communities have largely been converted to agriculture. Suppression of fire has encouraged the invasion of shrubs and trees into what few prairie remnants remain.

Improved areas of the base include developed areas that have lawns and landscape plants that are regularly maintained. Some portions of the semi-improved and unimproved areas of the base have been reseeded with a variety of native grasses. Grass heights within semi-improved areas, including airfield areas within 300 feet of the runway centerline, are maintained at 7 to 14 inches. Beyond the 300-foot border on the airfield, hay cutting dictates vegetation height. Substantial portions of the unimproved areas on the base are used for hay production. There are no known prairie remnants on Grand Forks AFB; however, some prairie index species (such as coneflowers) are found in the unimproved and semi-improved areas mixed in with brome grass and various herbaceous plants such as goldenrod (*Solidago* sp.). The 60-acre Prairie View Nature Preserve is located in the northeast corner of Grand Forks AFB.

Trees and shrubs make up less than 5 percent of the land cover at Grand Forks AFB and are primarily located in the housing areas and in planted shelterbelts and riparian areas along Turtle Creek (Grand Forks AFB 2011a).

#### 3.3.5.2 Wildlife

Information on wildlife occurring on Grand Forks AFB is provided in the INRMP (Grand Forks AFB 2011a). Native wildlife documented on the base includes a variety of mammals and birds. White-tailed deer, coyote, beaver (*Castor canadensis*), and red fox (*Vulpes vulpes*) are the most common large mammals, and the most common small mammals include the red squirrel (*Tamiasciurus hudsonicus*), grey squirrel (*Sciurus carolinensis*), white-tailed jackrabbit, Richardson's ground squirrel (*Spermophilus richardsonii*), and the plains pocket gopher (*Geomys bursarius*). Two carcasses of the fisher (*Martes pennanti*), once considered extirpated in North Dakota, were recently documented on the base.

Although no amphibian or reptile studies have been conducted at Grand Forks AFB, a variety of species are known to occur in Grand Forks County and could occur on base. These include the common garter snake, painted turtle (*Chrysemys picta*), Canada toad (*Bufo hemiphrys*), American toad (*Bufo americanus*), and wood frog (*Rana sylvatica*).

Grand Forks AFB is located in a zone of overlap between the Mississippi and Central Flyways (Grand Forks AFB 2010a). Therefore, bird species documented on the base include migratory species such as waterfowl and neotropical migrants. A total of 79 neotropical migrant species have been documented in various habitats on the base (Driscoll 2012).

### 3.3.5.3 Special-Status Species

No federally threatened or endangered species are known to occur at Grand Forks AFB. There is no critical habitat known to occur on base (USFWS 2013c). Eight special-status species are known to occur at Grand Forks AFB. North Dakota does not have a state endangered species act; instead, the state's Nature Preserves Act (NDCC 55-11) gives the North Dakota Parks and Recreation Department the responsibility to set aside a system of natural areas and nature preserves for the benefit of North Dakota citizens (NDPRD 2013). The North Dakota Natural Heritage Program (NDNHP) is administered under this act. The NDNHP uses an international system for ranking rare, threatened, and endangered species within the State of North Dakota. Species are ranked on a scale of one to five, primarily based on the number of known occurrences. The NDNHP develops a list of species along with their state rank identified as critically imperiled (S1), imperiled (S2), rare or uncommon (S3), apparently secure (S4), or secure (S5).

Table 3-24 presents the Federal and state-listed species identified as either occurring or potentially occurring at Grand Forks AFB (NDPRD 2013; USFWS 2013b). Only state special-status species classified as S1 or S2 are listed in the table.

**Table 3-24. Special-Status Species that Could Occur at Grand Forks AFB**

Common Name	Scientific Name	Status		Occurrence at Grand Forks AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
Birds				
Whooping crane	<i>Grus americana</i>	FE, MBTA	SX	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	MBTA, BGEPA	S1	Yes
American peregrine falcon	<i>Falco peregrinus anatum</i>	MBTA	S1	Yes
Yellow rail	<i>Coturincops noveboracensis</i>	-	S2	Yes
Mammals				
Fisher	<i>Martes pennanti</i>	-	S2	Yes
Reptiles/Amphibians				
Northern leopard frog	<i>Rana pipens</i>	-	S1	Yes
Plants				
Dutchman’s breeches	<i>Dicentra cucullaria</i>	-	S1	Yes
Lesser yellow lady’s slipper	<i>Cypripedium parviflorum</i> var. <i>parviflorum</i>	-	S2/S3	Yes
White lady’s slipper	<i>Cypripedium candidum</i>	-	S2/S3	Yes

<sup>a</sup> U.S. Fish and Wildlife Service

<sup>b</sup> North Dakota Parks and Recreation Department

**Key:** BGEPA – protected under the Bald and Golden Eagle Protection Act; FE – listed as endangered under the Endangered Species Act; MBTA – protected under the Migratory Bird Treaty Act; SX – state-listed as extirpated under the Nature Preserves Act; S1 – state-listed as critically imperiled; S2 – state-listed as imperiled; S3 – state-listed as rare or uncommon

**Source:** Grand Forks AFB 2011a; NDPRD 2013; USFWS 2013b.

The bald eagle has been observed near the sewage lagoons on Grand Forks AFB (Grand Forks AFB 2011a) (see Table 3-24). There is a documented bald eagle nest approximately 2 miles east of the base on the west side of the Kelly Slough NWR. During the 2009 winter bird survey (Grand Forks AFB 2010a), a bald eagle was observed near the Turtle River riparian area. American peregrine falcons (*Falco peregrinus anatum*) were observed at the sewage lagoons in 2009 and at the base water tower in 2011. No nests have been observed at Grand Forks AFB. An unconfirmed yellow rail (*Coturincops noveboracensis*) sighting was reported in 2008 at the main base.

Fisher carcasses have been found at the base, and the northern leopard frog (*Rana pipens*) has been observed in wetland areas throughout the base.

Three state-classified plant species (S1 and S2) were documented at Grand Forks AFB during a 2009 biological survey (Grand Forks AFB 2011a) (see Table 3-24). Dutchman's breeches (*Dicentra cucullaria*) was discovered in the Turtle River Lowland Woodlands/riparian forest, located in the northwestern portion of the base. The lesser yellow lady's slipper (*Cypripedium parviflorum* var. *parviflorum*) and the white lady's slipper (*Cypripedium candidum*) orchids were both found growing in intermixing patches, just west of the airfield. A new population of lesser yellow lady's slipper was also discovered growing in the grassy area north of the former munitions depot.

#### 3.3.5.4 Wetlands

Because Grand Forks AFB is located in the prairie potholes region, wetlands are common in this area. Approximately 308 acres of wetlands have been identified at Grand Forks AFB (Grand Forks AFB 2011a). Most of these are less than an acre and are typical of wetlands in highly disturbed, intense agricultural areas where watershed quality has been compromised. A recent wetland survey was conducted at the location of the proposed KC-46A facilities. Approximately 2 acres of emergent wetlands were identified in the project area.

### 3.3.6 Cultural Resources

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources.

#### 3.3.6.1 Architectural

Two architectural inventories have been conducted on Grand Forks AFB (Grand Forks AFB 2011b). In 1994, a Cold War-era properties survey evaluated 27 buildings and structures that were associated with the Cold War mission. In 2011, the base conducted a Section 110 inventory of 91 buildings built between 1956 and 1965. All buildings on Grand Forks AFB that are 50 years of age or older or that were associated with the Cold War era have been evaluated (Grand Forks AFB 2012b). With the exception of several unaccompanied personnel housing buildings, all the facilities evaluated have been determined non-eligible for the NRHP. The North Dakota SHPO has concurred with this determination. Although the unaccompanied personnel housing buildings are considered NRHP-eligible, the USAF has an agreement in place with the SHPO to allow for demolition or renovation since the impacts have been mitigated DoD-wide through completion of a mitigation program (ACHP 2006).

#### 3.3.6.2 Archaeological

Two archaeological surveys have been conducted on Grand Forks AFB (Grand Forks AFB 2012b). Twelve archaeological resources have been recorded on the base: one prehistoric site, five historic sites, three prehistoric isolated finds, and three historic isolated finds. None of the archaeological resources are eligible for the NRHP.

#### 3.3.6.3 Traditional

Grand Forks AFB has identified 23 tribes typically consulted with as part of the NEPA and Section 106 processes. This list of tribes is contained in Table A-1 in Volume II, Appendix A, Section A.3. There are no known tribal sacred sites or properties of traditional religious and cultural importance in the vicinity of Grand Forks AFB.

### **3.3.7 Land Use**

Grand Forks AFB is located in Grand Forks County, North Dakota, in a predominantly agricultural area. The City of Grand Forks is approximately 15 miles east of the base.

#### *3.3.7.1 Base*

The GP, last updated in 2006, defines the construction opportunities and existing land use at the base. The airfield and surrounding open space are the dominant land uses and cover the central to central-west portion of the base. The cantonment area, or community-focused area, is located east of the airfield. This area includes the administrative, housing (both for families and unaccompanied personnel), medical, and community land uses (commercial). Three youth/day care centers and two schools are also located in the eastern part of the base in the community-oriented and residential areas. Outdoor recreation (including a golf course on the south end of the airfield) and open space provide a buffer between the airfield functions and the cantonment area, and the base and the surrounding area. The GP describes future changes in land use on the base that will consolidate administrative uses into two areas, and aircraft operations and maintenance areas will expand into one continuous band east of the parking aprons (Grand Forks AFB 2006a).

The base manages a program for leasing open areas around the airfield for hay cultivation. One hay lease, totaling 664 acres, is currently active. Some of these agricultural operations extend outside of the airfield fence (USAF 2007b). The base has plans to expand the hay cultivation program, using open and undeveloped land away from the active mission support and industrial areas.

#### *3.3.7.2 Surrounding Areas*

As shown on Figure 3-3, the area surrounding Grand Forks AFB is rural, consisting primarily of agriculture and open space (pasture, recreation, and wildlife habitat), with scattered residences. The small community of the City of Emerado, with a population under 500 persons, is immediately adjacent to the base on the southeast corner. Other small farming communities in the surrounding area include Arvilla and Mekinock.

Developed and community-type uses near Grand Forks AFB include the mobile home park to the south; the University of North Dakota-owned biological research area adjacent to the base western boundary; Mekinock, an unincorporated community approximately 3 miles northeast of the base; and the base sewage treatment system on a separate parcel of land east of the main base.

Grand Forks AFB has three aviation easements to limit future land use or structural changes to some properties to the north, south, and west of the runway. Grand Forks AFB is bordered by lands in Mekinock Township to the west and north, and Blooming Township to the east. Oakville Township is located to the south-southeast, and Chester Township is located to the south. Per the Grand Forks County 2035 Land Use Plan, Grand Forks County has jurisdiction over the land use and zoning within Blooming and Chester Townships (GF 2006). Several townships manage the zoning of land within their jurisdiction. In general, the areas to the north and west that are zoned by the townships have adopted airfield protective ordinances. Zoning within Mekinock Township to the west of the base restricts residential land use to one dwelling per quarter section (USAF 2003b). Grand Forks County has enacted airfield protective zoning for the areas to the south and east of the airfield (excluding the City of Emerado).

The City of Emerado is zoned as an incorporated municipality and manages its zoning (GF County 2013). The town is mostly residential, with some business driven by the base population. The City of Emerado is its own jurisdiction for zoning regulations. These zoning

regulations were originally approved as City Code, Chapter XVII, in 1980 and updated in 1999. These apply to all lands within the city and an area extending one-half mile in all directions from the corporate boundaries of the city.

The base privatized housing area is located on the east side of the base. Agricultural land dominates the area between the eastern base border and Grand Forks International Airport, located approximately 8 miles away. The trend for future land use around the base is agricultural (GF County 2006).

Figure 3-3 shows that noise exposure for Grand Forks AFB is confined to the base airfield. This reflects the absence of the large aircraft that formerly operated at the base. The current RPA mission does not generate any consequential noise. Currently, no land outside the base is exposed to noise levels of 65 dB DNL or greater.

An AICUZ study was completed for Grand Forks AFB in 1995 and revalidated in 2003 for the KC-135, HH-1H, C-12, and numerous transient aircraft from other bases. The AICUZ study documents flight operations and proposes compatible use guidelines for land areas surrounding the base with future planning and zoning activities. The 2003 AICUZ update did not find any incompatibilities with the airfield, airfield activities, and the adjacent and surrounding land uses from a noise perspective (USAF 2003b), although a few farm-related structures are located in the north and south APZs. A pre-JLUS was conducted in 2004, but based on its findings at that time, it was determined that a full JLUS was not necessary.

### **3.3.8 Infrastructure**

#### **3.3.8.1 Potable Water System**

Potable water is provided to Grand Forks AFB by the City of Grand Forks. Potential secondary sources of water are from Aggasiz Water District and the Grand Forks-Trail Rural Water District. The pumping capacity from the City of Grand Forks to Grand Forks AFB is 1.9 MGD, but the water system on Grand Forks AFB can accommodate up to 2.5 MGD. The water storage capacity of the four elevated tanks located at Grand Forks AFB is 1.9 MG (Grand Forks AFB 2006a). Current average daily water use is 0.3 MGD, which is 16 percent of the base system capacity.

#### **3.3.8.2 Wastewater**

The sanitary sewer system on Grand Forks AFB is operated by the base and consists of a wastewater collection system and a series of treatment lagoons. The system was designed to support a population of approximately 10,000 (Klaus 2013). Sewage flows to the treatment facility by gravity and force mains. There are nine lift stations in the system and four treatment cells/lagoons (one primary, two secondary, and one tertiary). The lagoons have a total holding capacity of approximately 250 MG and have adequate capacity for future base expansion (Grand Forks AFB 2006a). Grand Forks AFB is authorized to discharge from its wastewater stabilization ponds to surface water in Kellys Slough. There are no limitations on flow volume; however, effluent restrictions are imposed by the Grand Forks AFB NPDES permit.

#### **3.3.8.3 Stormwater System**

Stormwater is collected from nine drainage areas (northeast, northwest, west, and southeast sections of the base) and is delivered to four separate drainage ditches constructed and maintained by the base. During periods of heavy rainfall or snowmelt, stormwater flows into the wetlands located along the base boundaries. The stormwater drainage system consists of open channels, catch basins, and underground concrete pipes, as well as paved and unpaved ditches

(Grand Forks AFB 2006a). The details of the stormwater permit for Grand Forks AFB are described in Section 3.3.4.2.1. The permit does not, however, authorize stormwater discharges associated with construction activities. A separate Notice of Intent and SWPPP must be filed for all new construction activities that disturb 1 or more acre.

#### *3.3.8.4 Electrical System*

Nodak Electric Cooperative supplies electrical power to Grand Forks AFB. The Steen and Eielson substations distribute power on the base. Over 72 percent of the base's power lines are buried. Eighty percent of the distribution transformers are loaded at less than 30 percent of their capacity, with over 99 percent of the transformers loaded at less than 60 percent during periods of peak demand. This leaves adequate electrical power capacity for future base expansion (Grand Forks AFB 2006a). Grand Forks AFB's electric system capacity is approximately 275,940 MWH per year or 756 MWH per day. Grand Forks AFB averages approximately 3,831 MWH per month or 127.7 MWH per day, with usage remaining fairly constant throughout the year.

#### *3.3.8.5 Natural Gas System*

Natural gas is supplied by XCEL Energy. Capacity and supply are sufficient for current and future mission requirements (Grand Forks AFB 2006a). The current Grand Forks AFB natural gas capacity is 2.3 million cubic feet (MMcf) per year. The current natural gas demand at Grand Forks AFB is approximately 11 percent of the base capacity.

#### *3.3.8.6 Solid Waste Management*

Most of the municipal solid waste and C&D waste generated at Grand Forks AFB is collected and transported off base by a local qualified contractor (Grand Forks AFB 2008a). This waste is currently disposed of at the Grand Forks Municipal Landfill (Permit No. 0347), which is located approximately 12 miles from the base. The landfill has a permitted capacity until 2014 at the current rate of up to 350 tons of waste per day (NDDH 2009).

Grand Forks AFB has a Qualified Recycling Program and implements mandatory recycling of nonhazardous solid waste from military family housing, dormitories, industrial shops, offices, tenants, and contractors. Recyclable materials are collected and transported by a contractor to a facility off of base property (Grand Forks AFB 2010b).

#### *3.3.8.7 Transportation*

Regional access to Grand Forks AFB is provided by U.S. 2, which extends parallel to the base along the length of its southern boundary. The nearest interstate highway is I-29. I-29 is the major north-south highway corridor along the North Dakota-Minnesota border and is less than 10 miles east of the base. Figure 2-11 shows the primary routes and regional transportation network in the vicinity of Grand Forks AFB. U.S. 2 is a four-lane divided highway that enters North Dakota from the east at the City of Grand Forks and continues west to the North Dakota-Montana border. Where U.S. 2 passes to the south of Grand Forks AFB, the average daily traffic count was 4,990 vehicles per day, 1,225 of which were commercial vehicles, in 2012 (NDDOT 2013). County Road 3 and Eielson Street provide access to Grand Forks AFB from U.S. 2.

The Burlington Northern Santa Fe Railway operates the closest rail line to Grand Forks AFB – the Grand Forks-Surrey line of the Devils Lake Subdivision, which runs just to the south of the

base, through the City of Emerado (NDDOT 2007). Amtrak provides regional passenger rail service by way of the Empire Builder line, with stops in Grand Forks and Devils Lake (75 miles west of Grand Forks AFB). Jefferson Bus Lines offers regional service with stops throughout the Upper Midwest and connects Grand Forks with other cities within North Dakota. Commercial airline service is available at Grand Forks International Airport, approximately 13 miles from the base, with access to three national and regional carriers.

#### 3.3.8.7.1 Gate Access

There are two entry gates to Grand Forks AFB. The primary entrance is the Main Gate located on Steen Boulevard off of County Road 3. The Commercial Gate is a secondary entrance on the southern edge of the base. The Commercial Gate connects U.S. Highway 2 to Eielson Street. The Main Gate is open 24 hours a day and the Commercial Gate is open on a limited basis (Grand Forks AFB 2010b).

#### 3.3.8.7.2 On-Base Traffic Circulation

The primary roadways on Grand Forks AFB are Steen Boulevard, J Street, and Eielson Street. Steen Boulevard is the center of the base roadway system. There are no on-base traffic circulation issues, and the road network is sufficient to accommodate the KC-46A MOB 1 scenario.

### 3.3.9 Hazardous Materials and Waste

#### 3.3.9.1 Hazardous Materials

Hazardous materials used by USAF and contractor personnel at Grand Forks AFB are managed in accordance with AFI 32-7086, “Hazardous Materials Management,” and controlled through the base HAZMART. This process provides centralized management of the procurement, handling, storage, and issuance of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials. The HAZMART process includes review and approval by USAF personnel to ensure users are aware of exposure and safety risks. P2 measures are likely to minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal.

##### 3.3.9.1.1 Aboveground and Underground Storage Tanks

Two bulk JP-8 fuel storage areas have a combined capacity of approximately 3.2 million gallons. The main bulk fuel storage facility is on the southern side of the base and serves as the main receiving point for JP-8. This facility supplies fuel to the ramp along the flightline. The other bulk fuel facility is on the west side of the base and supplies fuel to the Charlie Ramp. Other ASTs and USTs on the base are used to store gasoline, diesel, used oil, deicing fluid, ethanol fuel, and hydraulic oil.

All of the tanks at Grand Forks AFB are managed according to the base SPCC Plan (Grand Forks AFB 2009a), which addresses storage locations on base and proper handling procedures for all hazardous materials to minimize the potential for spills and releases. Spill response training, procedures, equipment, and notification procedures are further detailed in the FRP (PCCI 2004). The CEMP addresses roles, responsibilities, and response actions for all major accidents, including major spills (Grand Forks AFB 2011c). Since the departure of the KC-135 mission at Grand Forks AFB, usage of JP-8 has substantially decreased. In 2010, Grand Forks AFB used approximately 5 million gallons of JP-8; in 2012, the base used

approximately 583,000 gallons. JP-8 is delivered to the flightline by two Type III hydrant systems to 31 hydrant outlets in four rows on Charlie Ramp or by four R-11 tanker trucks.

#### 3.3.9.1.2 Toxic Substances

The Asbestos Management Plan provides guidance for the identification of ACMs, the management of asbestos, and the prevention of asbestos exposure to facility occupants and maintenance personnel (Grand Forks AFB 2005). Additionally, the Asbestos Operating Plan assigns responsibilities and describes procedures for handling ACM (Grand Forks AFB 2008b). A base-wide asbestos survey was completed in 1994 and identified ACM at some facilities on base. Federal and state regulations require that all affected parts of a facility being renovated or demolished must be inspected by a state-certified inspector for the presence of ACM prior to beginning a renovation or demolition project. All regulated ACM that would be disturbed as part of a renovation or demolition activity must be properly removed by state-certified individuals and properly disposed of in an approved landfill. A Notification of Demolition and Renovation Form must be submitted to the NDDH 10 days prior to beginning any demolition activity, whether or not asbestos is present (NDDH 2013a).

Grand Forks AFB assumes the presence of LBP in any building constructed before 1980 (Grand Forks AFB 2003). As a policy, contractors working on base are advised of the presence of LBP or the potential for LBP and are responsible for safeguarding their employees according to OSHA requirements. Buildings being demolished typically do not require LBP abatement, unless the LBP would be disturbed by sanding, scraping, dry-cutting, or torching. The Grand Forks AFB LBP Management Plan provides guidance on the management of LBP (Grand Forks AFB 2003). The base complies with all Federal, state, and local requirements regarding LBP, LBP activities, and LBP hazards.

None of the transformers at Grand Forks AFB have PCB-containing oil (Grand Forks AFB 2009a).

#### 3.3.9.2 Hazardous Waste Management

Grand Forks AFB is classified as a small-quantity generator. Typical hazardous wastes generated during operations and maintenance activities include aerosol cans, antifreeze and antifreeze filters, batteries, fuel and oil filters, fluorescent lamps, oil-water separator sludge, paint/primer related wastes, parts washer wastes, plastic/glass bead blaster filter, rags with oil or fuel, and used oil and fuels.

Hazardous wastes at Grand Forks AFB are managed in accordance with the Hazardous Waste Management Plan (Grand Forks AFB 2012c). This plan presents key activities associated with implementing a hazardous waste management program as required by Federal and state laws and regulations. In 2012, the base generated approximately 1,910 pounds of hazardous waste, which was disposed of at off-base permitted disposal facilities. Grand Forks AFB also operates a land treatment facility (IT-183) for the remediation of petroleum-contaminated soil in the southwestern portion of the base.

#### 3.3.9.3 Environmental Restoration Program

There are seven ERP sites at Grand Forks AFB that are administered in accordance with the Management Action Plan (Grand Forks AFB 2006b). Environmental response actions are planned and executed under the ERP in a manner consistent with CERCLA and other applicable laws.

### 3.3.10 Socioeconomics

Socioeconomics refers to features or characteristics of the social and economic environment. The main concern for socioeconomic resources is the change in personnel at Grand Forks AFB associated with the KC-46A MOB 1 scenario that could potentially impact population, employment, earnings, housing, education, and public services. Grand Forks County, North Dakota, is the ROI for this analysis.

#### 3.3.10.1 Baseline Conditions

##### 3.3.10.1.1 Population

In 2010, the population of Grand Forks County totaled 66,861 persons (U.S. Census 2010g). Between 2000 and 2010, the ROI population increased at an average annual rate of 0.1 percent, with a total increase of approximately 752 persons (U.S. Census 2000g, 2010g). The City of Grand Forks, the most populated city in Grand Forks County and the county seat, experienced an annual 0.7 percent increase over the 10-year period (U.S. Census 2000h, 2010h). The North Dakota population totaled 672,591 persons in 2010 and increased at an average annual growth rate of 0.5 percent between 2000 and 2010 (U.S. Census 2000i, 2010i) (see Table 3-25).

In 2012, Grand Forks AFB had a total work force of 2,513 personnel, which included 1,531 military personnel (full-time), 303 DoD civilians, and 679 other base personnel. In addition, there were an estimated 1,614 military dependents and family members associated with the full-time military personnel (Grand Forks AFB 2012a).

**Table 3-25. Population for the City of Grand Forks, Grand Forks County, and North Dakota**

Location	2000	2010	Annual Percent Change (2000–2010)
City of Grand Forks	49,321	52,838	0.7%
Grand Forks County	66,109	66,861	0.1%
North Dakota	642,200	672,591	0.5%

*Source:* U.S. Census 2000g, 2000h, 2000i, 2010g, 2010h, 2010i.

##### 3.3.10.1.2 Economic Activity (Employment and Earnings)

In 2011, the most recent data available, employment in Grand Forks County totaled 51,566 jobs (BEA 2012). The largest employment sectors in Grand Forks County were government (23.4 percent), followed by health care and social assistance (14.2 percent) and retail trade (14.1 percent) (BEA 2012). Construction accounted for 5.3 percent of total employment. In 2012, the unemployment rate in Grand Forks County was 3.7 percent (BLS 2013a). The county unemployment rate was higher than the state (3.1 percent) but lower than the Nation (8.1 percent) (BLS 2013b). As of April 2013, the monthly unemployment rate (not seasonally adjusted) for Grand Forks County was estimated at 3.8 percent (BLS 2013c).

Grand Forks AFB is an important contributor to the Grand Forks County economy through employment of military and civilian personnel and expenditures for goods and services. The total economic impact of the base on the surrounding communities between October 2011 and September 2012 was \$203,164,779. The payroll for military, DoD civilians, and other base personnel was \$99,201,416. An estimated \$9,320,859 worth of MILCON also occurred in 2012 (Grand Forks AFB 2012a).

### 3.3.10.1.3 Housing

Table 3-26 presents census-derived housing data for the City of Grand Forks and Grand Forks County. In 2010, Grand Forks County had 29,344 total housing units, of which 6.6 percent of the units (1,927) were vacant (U.S. Census 2010g). Approximately 80 percent of the total housing units in Grand Forks County are located in the City of Grand Forks. Of the total housing units in the City of Grand Forks, 5 percent (1,189) were vacant at the time of the 2010 Census (U.S. Census 2010h). Of the vacant units in the city, more than half (60 percent) were for rent, while nearly 43 percent of those vacant units in the county were available for rent.

**Table 3-26. Housing Data for the City of Grand Forks and Grand Forks County**

Location	Housing Units	Occupied	Vacant	For Rent
City of Grand Forks	23,449	22,260	1,189	711
Grand Forks County	29,344	27,417	1,927	835

*Source:* U.S. Census 2010g, 2010h.

There are three housing options available at Grand Forks AFB: government housing, unaccompanied housing, and housing in the local community. Currently, there are 576 housing units on base with an occupancy rate of 99.3 percent (USAF 2013f). Military family housing at Grand Forks AFB was privatized in August 2013.

There are five dormitories with a total of 412 dormitory units for unaccompanied Airmen in the rank of E-1 to E-4 with less than 3 years of service on Grand Forks AFB (USAF 2013f). Based on the 29 November 2012 Dormitory Master Plan and the FY 2015 Integrated Manpower Requirement Document, the requirement is 234 units, resulting in a surplus of 178 units (USAF 2013f). However, due to a recent increase in the number of unaccompanied Airmen during October 2012, the actual requirement the base is supporting is 326 enlisted, which leaves a surplus of 86 units. Housing in the local community is available for unaccompanied Airmen in the ranks of E-4 with 3 or more years of service.

### 3.3.10.1.4 Education

There are nine public school districts in Grand Forks County. The Grand Forks Public School District is the largest district, with 12 elementary schools, four middle schools, and two high schools. The district serves more than 7,000 students in Grand Forks and on Grand Forks AFB. The student-to-teacher ratios range from 9:1 to 16:1 (Grand Forks ECD 2012). In North Dakota, the recommendation for a prototypical public school is 15 students in kindergarten through third grade and 25 students in fourth grade and above (North Dakota DPI 2008).

There are two schools located on the base, Carl Ben Eielson Elementary (grades K–3) and Nathan Twining Elementary/Middle School (grades 4–8). Both are part of the Grand Forks Public School District. School-aged children in grades 9–12 who reside on base attend Grand Forks Central High School, located in Grand Forks (USAF 2012d).

### 3.3.10.1.5 Public Services

Public services in Grand Forks County include law enforcement, fire protection, emergency medical services, and medical services. The Grand Forks County Sheriff's Office is responsible for the law enforcement segment of public safety within the county. In addition to the Sheriff's Office, there are numerous law enforcement agencies in the area.

Fire protection is carried out by various rural and municipal fire departments throughout the county. Grand Forks staffs four strategically located fire stations with 57 firefighters (City of Grand Forks 2013). The closest fire station (Station 4) is located approximately 17 miles east of Grand Forks AFB. The Grand Forks County Emergency Management department provides an integrated emergency management system. Altru Health System is the major medical services provider in the Grand Forks region. The closest emergency room to the base is Altru Hospital, located in the City of Grand Forks.

#### 3.3.10.1.6 Base Services

The 319th Medical Group provides dental and medical services to military personnel and their families on the base. The base clinic provides routine and acute care and serves a local patient population of more than 7,000 active-duty and retired members and their families.

Other base services include dining facilities, recreation and fitness centers, and youth and family services. Dining facilities include the Airey Dining Facility, which seats up to 228 customers at a time, cybercafé, snackbar, and a sports café/bar. Recreation facilities include a pool, golf course, Frisbee golf, bowling lanes, and a 135,000-square-foot fitness center. Youth and family services on base include a CDC, family child care, and a youth center (USAF 2013f).

### 3.3.11 Environmental Justice and the Protection of Children

Grand Forks County represents the region of comparison for evaluating disproportionate effects (in Chapter 4) on populations of concern for environmental justice and for children. Table 3-27 shows that the proportion of minority persons in Grand Forks County is similar to the State of North Dakota, but much lower than is typical in the Nation as a whole. Low-income persons compose a slightly higher proportion of the county's population than in the State of North Dakota and the Nation as a whole. Also, the proportion of children in the county population is slightly lower than found in the State of North Dakota and the Nation.

**Table 3-27. Characterization of Environmental Justice Populations at Grand Forks AFB**

Location	Total Population	Minority		Low-Income <sup>a</sup>	Youth	
		Number	Percent	Percent	Number	Percent
Grand Forks County	66,861	7,590	11.35%	16.70%	13,421	20.07%
North Dakota	672,591	74,584	11.09%	12.30%	149,871	22.28%
United States	308,745,538	111,927,986	36.25%	14.30%	74,181,467	24.03%

<sup>a</sup> 2007–2011 estimate; all other values based on 2010 census.

Source: U.S. Census 2010g, 2010i, 2012.

### 3.4 McCONNELL AIR FORCE BASE

This section of Chapter 3 describes the baseline conditions of the environmental resources anticipated to be affected by implementation of the KC-46A FTU or MOB 1 scenario at McConnell AFB and, when applicable, in areas surrounding the base. The baseline resource conditions are described to the level of detail necessary to support analysis of the potential impacts that could result from implementation of the KC-46A FTU or MOB 1 scenario at McConnell AFB.

#### 3.4.1 Noise

Noise, which is defined as unwanted sound, has the potential to affect several resource areas evaluated in this Final EIS. Background information on the regulatory setting and methodology for noise is contained in Volume II, Appendix B, Sections B.1.2 and B.1.3.

##### 3.4.1.1 Base-Affected Environment

The current mission at McConnell AFB is described in Section 2.4.4 and includes KC-135 aircraft. Table 3-28 shows noise levels of the KC-135 at different heights above the ground during landings and takeoffs. Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in Table 3-28. The noise levels in this table are presented as SELs in dB, which are the sum of sound energy during the noise event.

**Table 3-28. Aircraft Noise Levels at McConnell AFB**

Aircraft	Power Setting	SEL at Overflight Distance (in dB)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-135	65% NF	100	95	90	84	75	67
Takeoff							
KC-135	90% NF	105	100	95	90	81	73

*Note:* Aircraft airspeed is 160 knots. Aircraft operate at various airspeeds in and around the airfield.

*Key:* Power Unit: NF – engine fan revolutions per minute

*Source:* NOISEMAP 7.2 Maximum Omega 10 Results.

Of the 38,618 annual operations conducted at McConnell AFB, 8 percent occur during the night between 10:00 P.M. and 7:00 A.M. Due to the potential for night noise to be particularly intrusive, noise events occurring during this time period are assessed a 10 dB penalty when calculating DNL.

The baseline noise contours shown on Figure 3-4 reflect the current level of operations at McConnell AFB and were calculated using NOISEMAP (Version 7.2). As a point of reference, Figure 3-4 also shows the 65 dB DNL noise contour published in the 2004 AICUZ report (USAF 2004). The changes in calculated noise levels between baseline conditions and the 2004 AICUZ report result from operations data updates and refinements to noise modeling algorithms. KC-135 operations have decreased since 2004, resulting in reduced noise levels. Baseline noise levels were calculated using algorithms that account for location-specific effects of local terrain (e.g., hills and valleys) and ground impedance (e.g., grass absorbs sound energy to a greater degree than water).

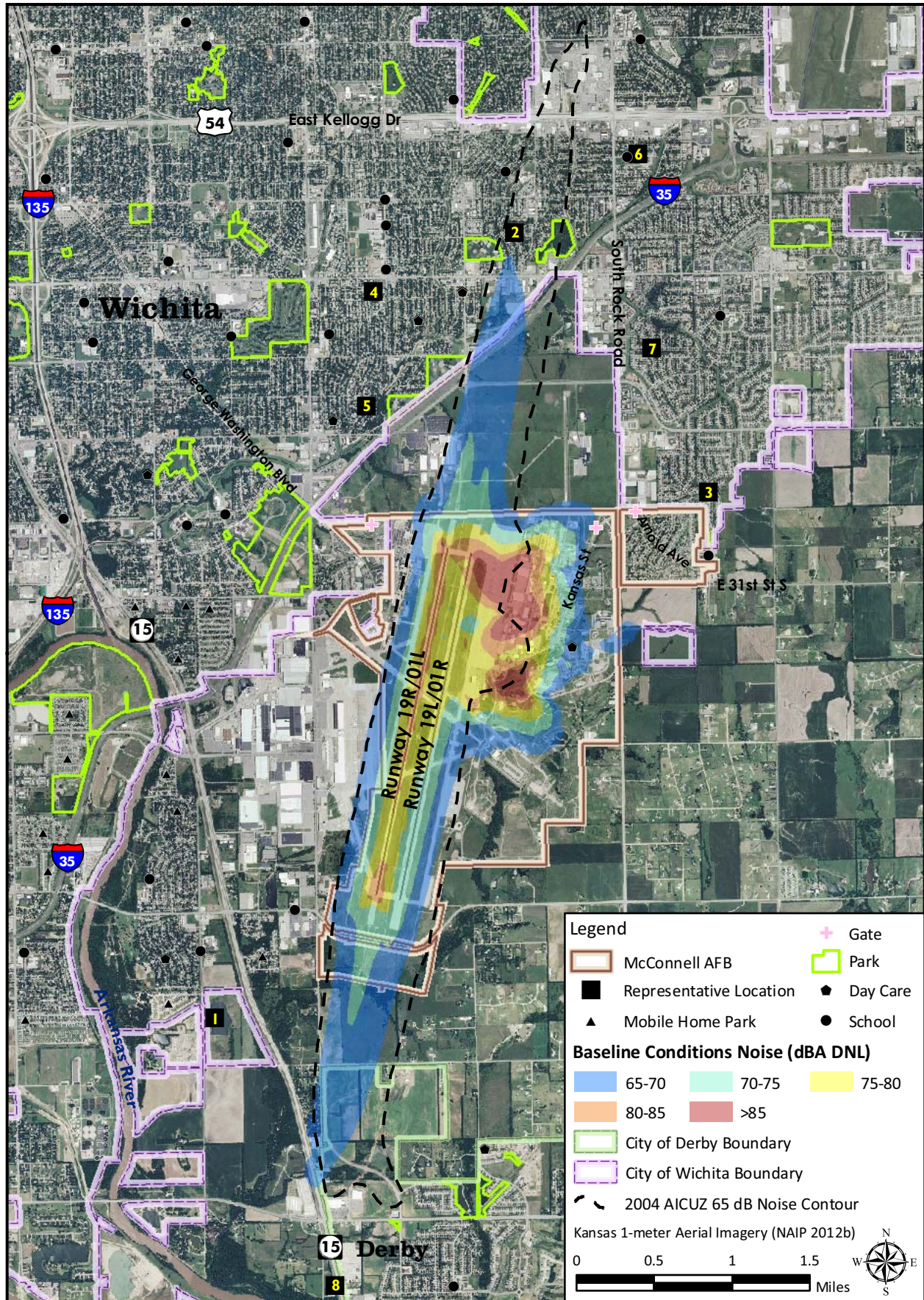


Figure 3-4. McConnell AFB Baseline Noise Contours

Table 3-29 shows the number of on- and off-base acres and estimated residents that are currently exposed to noise levels greater than 65 dB DNL. It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed, and this has been accepted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.4.7 and Volume II, Appendix C, Section C.1.3.1). On base, 46 buildings are affected by noise levels of 80 dB or greater. Per DoD policy, the 80 dB DNL noise contour is used to identify populations most at risk of potential hearing loss (USD 2009). If no residence or populated area is within the 80 dB DNL contour, then no further risk assessment is warranted. None of the affected buildings are residential. The risk of hearing loss among workers at McConnell AFB is managed according to DoD regulations for occupational noise exposure. OSHA and NIOSH occupational noise exposure regulations would continue to be enforced to protect employees of McConnell AFB.

**Table 3-29. Population and Acreage Affected Under Noise Contours Near McConnell AFB, Baseline Conditions**

Noise Level (dB DNL)	Baseline Conditions		
	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	213	650	438
70–74	1	74	418
75–79	0	0	455
80–84	0	0	198
≥85	0	0	128
<b>Total</b>	<b>214</b>	<b>724</b>	<b>1,637</b>

*Note:* Population estimates were made based on 2010 U.S. Census Bureau data. The number of persons currently residing in affected areas may differ from what has been stated.

Table 3-30 presents noise conditions at several representative locations in the area surrounding McConnell AFB. The representative locations do not denote a specific noise-sensitive receptor, but were instead established based on central points of U.S. Census subdivisions. The areas in the vicinity of the representative locations are expected to experience similar aircraft noise levels. Of the 8 locations studied, which are depicted on Figure 3-4, only one location experiences aircraft noise levels at or greater than 65 dB DNL. Departures and closed patterns of transient aircraft (e.g., F-16C, T-38C) are the operations that are major contributors to noise in the McConnell AFB vicinity. A few KC-135 closed pattern operations were also part of the top five SEL noise contributors. Table C-1-4 in Volume II, Appendix C, Attachment C-1, provides details regarding the major noise-contributing operations at each location under baseline conditions at McConnell AFB.

**Table 3-30. McConnell AFB Representative Locations Under Baseline Conditions**

Location ID	Baseline Conditions	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	52	83–94
2	65	95–108
3	54	80–89
4	52	81–95
5	55	85–96
6	53	85–98
7	52	82–102
8	61	91–102

<sup>a</sup> ‘Top 5 SELs’ refers to the range of loudest five event types experienced at the location (see Volume II, Appendix C, Attachment C-1).

Base flying procedures have been designed to minimize impacts on the surrounding community while maximizing operational capacity and flexibility. Lower-level closed pattern operations are not allowed to be conducted between 10:00 P.M. and 6:00 A.M. Transient aircraft are not permitted to conduct practice landings between 10:00 P.M. and 6:00 A.M., with the exception of transient KC-135 aircraft. Based KC-135 aircraft regularly use the airfield, and noise patterns are established (McConnell AFB 2006a). Noise complaints in the community around McConnell AFB are infrequent. Complaints range from general noise complaints to complaints of low-flying aircraft.

### 3.4.2 Air Quality

In Kansas, the Kansas Department of Health and Environment (KDHE) is responsible for enforcing air pollution regulations. The KDHE uses the NAAQS to regulate air quality within Kansas. Additional background information on the CAA and the NAAQS is contained in Volume II, Appendix B, Section B.2. Information on regional climate is contained in Volume II, Appendix D, Section D.4.

The KDHE Bureau of Air Quality enforces the NAAQS by monitoring state-wide air quality and developing rules to regulate and permit stationary sources of air emissions. The Kansas Air Quality Regulations are found in Article 19, Agency 28, of the *Kansas Administrative Regulations* (KDHE 2013a). McConnell AFB currently operates under a Class II Permit-By-Rule Operating Permit, under *Kansas Administrative Regulation* 28-19-564.

#### 3.4.2.1 Region of Influence and Existing Air Quality

Air emissions produced from construction and operation of the KC-46A aircraft at McConnell AFB would mainly affect air quality within the greater Wichita area and Sedgwick County. KC-46A operations associated with the FTU scenario would also affect air quality in the immediate vicinity of auxiliary airfields and along aircraft flight routes between these locations. Currently, Sedgwick County and the areas surrounding the auxiliary airfields proposed for use by the FTU are in attainment of the NAAQS for all pollutants. However, air monitoring data show that maximum O<sub>3</sub> levels recorded in the Wichita area from 2010 to 2012 are slightly higher than the national standard (KDHE 2013b). Prescribed burns and wildfires within and outside of Kansas that transported smoke and O<sub>3</sub> precursor emissions into the area were contributors to some of these high O<sub>3</sub> readings (USEPA 2012). As a result, the USEPA excluded these “exceptional events” as O<sub>3</sub> exceedance days in the area. Whether the Wichita area remains in attainment of the O<sub>3</sub> standard will depend on future air quality levels, in addition to the outcome of the current effort of the USEPA to review the appropriateness of the existing national O<sub>3</sub> standard.

#### 3.4.2.2 Regional Air Emissions

Table 3-31 summarizes estimates of the annual emissions generated by Sedgwick County in CY 2008 (USEPA 2013a). The majority of emissions within the region occur from (1) on-road and nonroad mobile sources (VOCs, CO, and NO<sub>x</sub>), (2) solvent/surface coating usages (VOCs), and (3) fugitive dust from unpaved roads and construction activities (PM<sub>10</sub>/PM<sub>2.5</sub>).

**Table 3-31. Annual Emissions for Sedgwick County, Kansas, CY 2008**

Source Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Stationary Sources	19,509	9,576	4,984	817	42,473	6,228	34,902
Mobile Sources	8,223	93,851	15,510	199	819	646	3,190,452
<b>Total</b>	<b>27,732</b>	<b>103,426</b>	<b>20,495</b>	<b>1,016</b>	<b>43,292</b>	<b>6,874</b>	<b>3,225,354</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

Source: USEPA 2013a.

### 3.4.2.3 McConnell AFB Emissions

Operational emissions due to existing operations at McConnell AFB occur from (1) aircraft operations and engine maintenance/testing, (2) AGE, (3) onsite GMVs and POVs, (4) offsite POV commutes, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and area sources. Table 3-32 summarizes the most recent estimate of annual operational emissions that occurred at McConnell AFB (CY 2012). Data needed to calculate existing emissions at McConnell AFB were obtained from (1) the project noise analyses for aircraft operations, (2) activity data collected for 2012 operations, (3) a statement of 2012 stationary source emissions for McConnell AFB (McConnell AFB 2013a), and (4) the 2012 Fairchild AFB emissions inventory for AGE and mobile fuel operations. The analysis used AGE and mobile fuel operations data from Fairchild AFB, as McConnell AFB is not required to collect these data as part of their air permitting process. Emission factors used to calculate combustive emissions for the KC-135 aircraft were based on emissions data developed by CFM International for the CFM56-2B1 engine (ICAO 2013a). The data in Table 3-32 also are used to estimate non-aircraft source emissions for future project scenarios at McConnell AFB. Volume II, Appendix D, Section D.4, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from existing sources at McConnell AFB.

**Table 3-32. Annual Emissions from Existing Operations at McConnell AFB, CY 2012**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-135 Aircraft Operations	10.89	176.49	291.09	27.06	1.47	1.47	75,389
Transient Aircraft	11.89	52.46	97.63	8.46	6.72	6.72	20,676
On-Wing Aircraft Engine Testing – KC-135	2.03	27.92	44.75	3.56	0.19	0.19	9,907
Aerospace Ground Support Equipment	1.67	11.98	14.08	0.40	1.86	1.71	1,708
GMVs/Nonroad Equipment	1.67	9.13	22.09	0.58	1.81	1.06	2,659
Privately Owned Vehicles – On Base	0.24	8.49	1.64	0.02	0.08	0.04	1,258
Privately Owned Vehicles – Off Base	1.40	41.47	10.02	0.09	0.75	0.43	6,052
Mobile Fuel Transfer Operations	0.11	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	<sup>a</sup>	7.96	11.94	0.27	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
<b>Total Emissions</b>	<b>40.79</b>	<b>335.90</b>	<b>493.25</b>	<b>40.43</b>	<b>12.89</b>	<b>11.63</b>	<b>117,551</b>

<sup>a</sup> Source does not emit particular pollutant.

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

### 3.4.3 Safety

#### 3.4.3.1 Flight Safety

McConnell AFB has had only two Class B mishaps and zero Class A mishaps on or around the airfield in the last 10 years. Both of the Class B mishaps were engine component failures. Neither was due to conditions around/on the airfield nor related to BASH (USAF 2013g). Since 1965, KC-135 aircraft at McConnell AFB have been involved in two Class A mishaps (Hector 2009).

The KC-135 and the future KC-46A have the ability to jettison fuel during emergency situations. Data on historical KC-135 operations show that slightly less than two sorties per thousand resulted in a release of fuel (AMC 2013). The ability to land the KC-46A at a much higher weight than the KC-135 would be expected to reduce the frequency of fuel releases for the KC-46A. As such, it is expected that KC-46A sorties would experience a lower frequency of fuel releases.

It is the policy of the USAF MAJCOMs to follow AFIs or supplement those AFIs that have been established. These policies require that pilots avoid fuel jettison, unless safety of flight dictates immediate jettison. For example, AMC policy, which covers all USAF tanker assets, requires that, whenever possible, any fuel released from an aircraft must occur above 20,000 feet AGL (AMC 2004, 2012). This policy is designed to minimize potential impacts of fuel jettison events.

The main environmental concern from fuel released from an aircraft is the deposition of fuel onto the ground and/or surface waters and subsequent negative impact on human health or natural resources. The results of a definitive study on the fate of jettisoned fuel from large USAF aircraft (e.g., KC-135) (Deepti 2003) were used to identify a reasonably conservative ground-level fuel deposition value for the KC-46A. This study used the Fuel Jettison Simulation model developed by the USAF to estimate the ground deposition of fuel from jettison events (Teske and Curbishley 2000). This maximum ground-level fuel deposition value identified for the KC-46A would result in effects that are well below known natural resource and human health thresholds for jet fuel. Therefore, the maximum fuel deposition value expected from the KC-46A would not produce substantial impacts on human health or natural resources. In view of this, no further analysis is included in this section.

#### 3.4.3.1.1 Wildlife Strike Hazard at McConnell AFB and Vicinity

Bird-aircraft strikes (as well as other animal strikes) on the runway and during takeoffs and landings have been documented as an ongoing hazard in the BASH program. The base is located on a migration flyway for Canadian geese, as well as other migratory birds. The base has a BASH program to help minimize the potential for migratory birds to congregate on base. Records from 2005 to 2009 show numerous bird strikes ranging from 114 in 2006 to 33 in 2009 (USAF 2013g).

The wildlife that have been identified to pose the greatest risk of damaging aircraft are Canada geese, various duck species, common nighthawks, gulls, pigeons, starlings, deer, and raptors. The BASH Plan provides instructions to identify the species of bird whenever a strike occurs to direct bird reduction methods.

The BASH Plan identifies several approaches to reduce bird/wildlife-aircraft strike hazards, including grounds maintenance, physical removal of the birds, and improving flight crew awareness. Flight Safety is primarily responsible for BASH monitoring and improvement and is required to abide by the BASH Plan (McConnell AFB 2012a).

As is the case at other bases, the BASH program is divided into two periods: Phase I and Phase II. For most operations, the procedures are the same. However, some restrictions may apply to Phase II. Phase II is identified as a period of higher bird activity based on data collected over many years. Phase II normally begins 1 September and ends 28 February.

#### 3.4.3.2 Ground Safety

There are 370 acres of the CZ and 2 acres of APZ I within the base boundary. All of the land in the northern and southern APZs I and II is outside the base boundary and partially in the limits of the City of Wichita. The land in the Wichita City limits is zoned commercial and residential.

Land in the southern APZ I is in Sedgwick County and in the southern APZ II is partially in Sedgwick County and partially in the City of Derby. Each of McConnell AFB's CZs consists of an area 3,800 feet wide by 3,000 feet long. Each APZ I is 3,800 feet wide by 5,000 feet long, and each APZ II is 3,800 feet wide by 7,000 feet long.

Land in the northern CZ is partially within the base boundary, with the remainder zoned as industrial land in Sedgwick County. Land in the southern CZ is within the base boundary, with the exception of 47th Street.

As indicated in Section 3.4.7, Land Use, the majority of the land in the northern APZ I consists of industrial and open-space/low-density use in Sedgwick County. The southern APZ I is entirely in Sedgwick County and land use is primarily open-space/low-density. The northern APZ II is almost entirely in the City of Wichita, and land use is primarily residential, along with smaller parcels of commercial land use south of Harry Street. Land within the southern APZ II consists of open-space/low-density and residential use in Sedgwick County, and commercial and open-space/low-density use in the City of Derby.

Capability for fire response is located on base and in the local communities. The base fire department is party to mutual-aid support agreements with the nearby communities.

### **3.4.4 Soils and Water**

#### *3.4.4.1 Soil Resources*

McConnell AFB is located in the Arkansas River Lowlands section of the Central Lowland physiographic region. Soil underlying the base is primarily of the Urban land–Irwin and of the Urban land–Tabler associations (NRCS 2012). Most of the native soils on base have been disturbed and as a result, soils have been intermixed with urbanized land features, making the original soils unidentifiable (HQ AMC 2012; McConnell AFB 2004a). The soil of these associations is deep and moderately well-drained, with high run-off and slow permeability.

#### *3.4.4.2 Water Resources*

##### *3.4.4.2.1 Surface Water*

McConnell AFB is located in the Lower Arkansas River watershed (HQ AMC 2012). Major surface water features located in the vicinity of McConnell AFB include the Arkansas River, located approximately 3 miles southwest of the base, and two tributaries of the Arkansas River, McConnell Creek and Gypsum Creek (McConnell AFB 2004a; USAF 2009). Surface water features on base include small feeder tributaries of the Arkansas River and several small ponds, which are used for irrigation or stormwater control (McConnell AFB 2004a). The majority of surface drainage on the base flows into McConnell Creek, which later discharges into the Arkansas River southwest of the base. The remaining drainage is captured by Gypsum Creek, which also discharges to the Arkansas River (HQ AMC 2012). The Arkansas River at Wichita is identified on the Clean Water Act (CWA) 303(d) list as impaired for its lead, phosphorus, biology, chloride, and fecal coliform levels (KDHE 2012).

Underground pipes, culverts, and natural channels collect stormwater run-off from the base (McConnell AFB 2004a). Run-off from McConnell AFB is conveyed off base via drainage swales, storm sewers, and drainage channels through 1 of 13 outfalls.

McConnell Creek runs across the base in a northeast to southwest direction and receives drainage from the largest portion of the base through 1 of the 13 outfalls. The gates of the main channel

and bypass control structures near Sedgwick Street can be closed in the event of a spill (USAF 2009). The western portion of the base discharges into Gypsum Creek via multiple drainage channels. McConnell Creek has been classified as a jurisdictional water of the United States (a waterway that falls within the Section 404 jurisdiction of the U.S. Army Corps of Engineers [USACE]).

To manage stormwater run-off and to protect the quality of surface water on base and in the vicinity of the base, McConnell AFB has been issued two different stormwater permits. The base housing area is covered under a municipal storm sewers permit, and the remainder of the base is covered by an industrial NPDES permit. The NPDES permit requires stormwater outfall sampling at different frequencies and in different watersheds, depending on the activities being conducted on the base. For example, deicing occurs along a taxiway in Drainage Area 1-19. While all outfalls are sampled on a regular basis, Outfall 19 is sampled at an increased frequency during periods of deicing activities. Deicing is conducted with a propylene glycol solution.

During the past 3 years all deicing has occurred at Taxiway Alpha in Drainage Area 1-19. The deicing system at this location consists of three deicing pads and associated infrastructure. Stormwater runoff from the deicing pads that occurs during the winter months is collected and temporarily stored in an underground holding tank. The effluent collected from this tank is gradually pumped from the holding tank through a wet well for release to the sanitary sewer system. During the summer months, a diversion valve in the system allows runoff from the Taxiway Alpha stormwater system to be conveyed to Outfall 19.

Past sampling results at the outfall from Drainage Area 1-19 have indicated elevated biological oxygen demand (BOD) levels, which could result from deicing chemicals. These levels have been reported to the KDHE in accordance with permit requirements. The base, in coordination with the KDHE, has implemented best management practices to reduce BOD levels in surface water at this outfall. These have included monitoring, flushing of the system prior to opening the diversion valve, replacement of the diversion valves, and a discontinued effort to conduct deicing on a parking apron. The base will continue to monitor and report BOD exceedances, should they occur from this outfall. The NPDES permit also requires periodic visual monitoring to ensure that discharges are in compliance with permit requirements (KDHE 2008). The current NPDES permit expired as of 31 December 2012. However, the renewal has been submitted and the base is permitted to continue to discharge under this permit until further notice (Pettus 2013a).

#### 3.4.4.2.2 Groundwater

A shallow, unconfined aquifer and a deeper, water-bearing aquifer occur below McConnell AFB. The shallow aquifer is between 1 and 22 feet below ground surface and generally flows in accordance to the local topography toward local surface water drainage features. Due to insufficient data, the direction of flow of the deep aquifer is undetermined at this time (McConnell AFB 2007). Groundwater on base is not used as a source of potable water.

#### 3.4.4.2.3 Floodplains

Preliminary mapping shows that approximately 250 acres of the base are located within the 100-year floodplain. The areas located within the 100-year floodplain are along McConnell Creek and several of its intermittent tributaries that cross the base from northeast to southwest (HQ AMC 2012).

### **3.4.5 Biological Resources**

#### *3.4.5.1 Vegetation*

Tall and mixed grass prairie historically dominated the land associated with and surrounding McConnell AFB (McConnell AFB 2004a). Agriculture dominated the area prior to construction of the original city airport. Subsequently, much of the natural vegetative community in the vicinity of the base has been altered or eliminated by agricultural activities and urban development.

Nearly 90 percent of McConnell AFB is improved or semi-improved habitat (McConnell AFB 2004a). Vegetative cover within the improved areas typically includes mowed lawns and select tree and shrub landscaping, mostly around buildings and along major streets. Semi-improved areas are also largely mowed grass areas with scattered trees. The area around the airfield consists primarily of grasses that are periodically mowed in accordance with BASH requirements.

Most unimproved areas on the base are disturbed sites with opportunistic herbaceous growth, old agricultural fields that have lain fallow for many years, or wooded riparian corridors (McConnell AFB 2004a). Most of the unimproved land is found in the southern half of the base, except for a small area east of the housing area. The area of the base south of 47th Street was leased for grazing in the past. Although grazing may partially simulate the disturbance of fire, some invasion by woody species and opportunistic herbaceous plants still occurs. The area is not currently leased for grazing but could be in the future.

#### *3.4.5.2 Wildlife*

Information on wildlife occurring on McConnell AFB is provided in the INRMP (McConnell AFB 2004a) and by the McConnell AFB Natural Resource Manager. Wildlife habitat is limited on McConnell AFB due to the extensive development. White-tailed deer and coyotes are the most common large mammals, and the eastern cottontail rabbit, opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*) are the most common small mammals. Although no amphibians or reptiles have been identified on McConnell AFB, a variety are known to occur in Sedgwick County, the most common of which are the western chorus frog (*Pseudacris triseriata*), bullfrog, and plains leopard frog (*Rana blairi*).

McConnell AFB is located within the Central Flyway (USFWS 2013a), which is a bird migration corridor generally designated for waterfowl and managed by state governments and the USFWS. Therefore, a large number of geese and ducks may occur in the general region during migration seasons.

#### *3.4.5.3 Special-Status Species*

No known Federal or state threatened or endangered species are known to occur at McConnell AFB. There is no critical habitat known to occur on base (USFWS 2013c). Although no special-status species are known to occur at McConnell AFB, 11 species have the potential to occur in Sedgwick County, Kansas (see Table 3-33). Many varieties of birds protected under the Migratory Bird Treaty Act occur as residents or migrants near McConnell AFB.

**Table 3-33. Special-Status Species that Could Occur at McConnell AFB**

Common Name	Scientific Name	Status		Occurrence at McConnell AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
Birds				
Eskimo curlew	<i>Numenius borealis</i>	MBTA	SE	No
Interior least tern	<i>Sterna antillarum</i>	FE, MBTA	SE	No
Peregrine falcon	<i>Falco peregrinus</i>	MBTA	SE	No
Piping plover	<i>Charadrius melodus</i>	MBTA	SE	No
Snowy plover	<i>Charadrius alexandrinus</i>	MBTA	ST	No
Whooping crane	<i>Grus americana</i>	FE, MBTA	SE	No
Fish				
Arkansas darter	<i>Etheostoma cragini</i>	FC	ST	No
Arkansas River shiner	<i>Etheostama cragini</i>	-	SE	No
Arkansas River speckled chub	<i>Macrhybopsis tetranema</i>	-	SE	No
Silver chub	<i>Macrhybopsis storeriana</i>	-	SE	No
Mammals				
Eastern spotted skunk	<i>Spilogale putorius</i>	-	ST	No

<sup>a</sup> U.S. Fish and Wildlife Service<sup>b</sup> Kansas Department of Wildlife, Parks and Tourism

**Key:** FC – candidate for Federal listing; FE – listed as endangered under the Endangered Species Act; MBTA – protected under the Migratory Bird Treaty Act; SE – state-listed as endangered; ST – state-listed as threatened

**Source:** KDWPT 2005; McConnell AFB 2004a; USFWS 2013b.

#### 3.4.5.4 Wetlands

An onsite investigation performed in April 2000 identified a total of 14.8 acres of wetlands on base, including 3.04 acres of palustrine forested wetlands and 11.76 acres of palustrine emergent wetlands (McConnell AFB 2004a). Additionally, 6.33 miles of McConnell Creek, streams, and ditches on base exhibited wetland characteristics.

### 3.4.6 Cultural Resources

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources.

#### 3.4.6.1 Architectural

All buildings and structures with the potential to be considered eligible for listing on the NRHP have been evaluated at McConnell AFB. In 1995, all buildings constructed prior to 1956 were evaluated (McConnell AFB 2004b). In 1996, the buildings on the base constructed between 1945 and 1989 were evaluated as part of a larger Cold War study that evaluated 27 bases and associated ranges around the country (USAF 1996). Additional architectural reviews have occurred during periodic Integrated Cultural Resource Management Plan updates. In 2011, McConnell AFB conducted a Section 110 inventory that examined 81 buildings and structures. McConnell AFB has determined that five buildings and one structure are eligible for the NRHP: Hangars 9, 1106, and 1107; Buildings 1218 and 1219; and the paved flightline (McConnell AFB 2004b; Rosin Preservation 2011). The Kansas SHPO has concurred with eligibility determinations for Hangar 9 and Buildings 1218 and 1219, and McConnell AFB is continuing to consult regarding Hangars 1106 and 1107 and the paved flightline (see Volume II, Appendix A, Section A.4.4). No Section 106 consultation is required for housing units covered by program comments (e.g., Department of the Air Force Program Comment for Capehart and Wherry Era Housing and Associated Structures and Landscape Features [1949–1962] [70 *Federal Register* [FR] 66959]).

#### *3.4.6.2 Archaeological*

Three archaeological surveys have been conducted on McConnell AFB since 1978. The entire base has been surveyed for archaeological resources, resulting in the identification and documentation of eight historic archaeological sites (McConnell AFB 2004b). There are no NRHP-eligible archaeological sites on McConnell AFB.

#### *3.4.6.3 Traditional*

McConnell AFB has identified 12 tribes typically consulted with as part of the NEPA and Section 106 processes. This list of tribes is contained in Table A-1 in Volume II, Appendix A, Section A.3. There are no known tribal sacred sites or properties of traditional religious and cultural importance in the vicinity of McConnell AFB.

### **3.4.7 Land Use**

McConnell AFB is located in Sedgwick County, Kansas, on the outskirts of Wichita, Kansas. Land use surrounding McConnell AFB is a mixture of industrial, residential, commercial, and agricultural (or undeveloped areas). The downtown area of the City of Wichita is approximately 6 miles northwest of the base, and the City of Derby is located approximately 2 miles to the south.

#### *3.4.7.1 Base*

The 2011 McConnell AFB IDP describes the long-term development opportunities, current land uses, and the projected future direction for the base. As shown on Figure 3-4, the airfield area dominates the base. The airfield, including the taxiways and parking aprons on the east and west, extends to the northern and southern base boundary. On the east side of the airfield, industrial and aircraft maintenance areas are located directly adjacent to the airfield. Additional industrial use areas are situated in the southeast part of the base, surrounded by open space and outdoor recreation areas. The main cantonment area with the administrative, community services (medical, commercial), and housing (for both unaccompanied Airmen and families) is east of the industrial and aircraft areas. The west side of the airfield is developed with a similar arrangement on a smaller scale with aircraft maintenance and industrial-use areas along the airfield, a core built-up area with mission support activities, and open space areas interspersed between the base boundary and the built-up areas (McConnell AFB 2011a).

The 2011 IDP indicates that the current arrangement of land uses on McConnell AFB will continue into the future. Several future construction projects are identified in the IDP for the main cantonment area on the east side, including the development of the Krueger Recreation Area (McConnell AFB 2011b; USAF 2012e).

Figure 3-4 shows that much of the cantonment area is exposed to noise levels of 65 dB DNL and greater. These noise levels are not incompatible with most mission functions and land use. One child care facility is exposed to these higher noise levels. The family housing area on the northeast end of the base is outside the noise exposure zone.

#### *3.4.7.2 Surrounding Areas*

The City of Wichita extends to the McConnell AFB boundary to the north and west. Unincorporated areas of Sedgwick County surround the base to the north, east, south, and west (where the City of Wichita does not).

The area north of McConnell AFB and east (south) of I-35 has a mixture of open/vacant land, industrial and commercial land, with pockets of residential land. Land located east of the base is

primarily agricultural and less urbanized. Industry is the primary use immediately to the north and west of the base, notably with a Cessna aircraft facility on the northwest and the Cessna airfield/runway to the north. Several large aviation industrial facilities and warehouse/storage buildings are located directly to the west of the base. A small residential area next to the Kansas Aviation Museum is directly west-northwest of the base. Residential land use is also located east of U.S. Highway 15 immediately southwest of the base. Open/undeveloped land, intermixed with lower-density residential areas, is located to the east and southeast.

The future land use planning for the City of Derby is outlined in its 2006 Comprehensive Plan. There is a projected population increase of 10,000 to 15,000 new residents by 2030, with a likely expansion of single-family residential development to accommodate this increase. This is a potential encroachment concern for McConnell AFB. However, the City of Derby defines a McConnell AFB buffer zone for areas within the noise zones (Derby 2006).

The City of Wichita and Sedgwick County are in the process of updating their 1999 Comprehensive Plan. The two jurisdictions have adopted a unified zoning code that serves as the basis for land use approvals and permitting in the areas around McConnell AFB. The City of Wichita's 2030 future development planning anticipates urban growth in areas to the southeast of the base. Areas north and northwest of the base are zoned for a future industrial district.

About 720 acres around the base are currently exposed to noise levels of 65 dB DNL and greater. On the north side, the land is mostly vacant and industrial with a small extension north of I-35 into a residential area in Eastridge (a Wichita neighborhood with density greater than one dwelling unit per acre). A few homes and a church are within the noise envelope. To the south, the 65 dB DNL exposure envelope is mostly over agricultural land in the north end of the City of Derby. A residential area with a day care center and mobile home park are located immediately southwest of the airfield, but both are outside the current 65 dB DNL footprint and the APZs.

Flight tracks for landing and takeoff, and closed-pattern operations at the McConnell airfield have been designed to minimize noise exposure to the Cities of Wichita and Derby (HQ AMC 2011). Aircraft arrive and depart from both the northeast and southwest ends of the runway. The closed-pattern looping extends to the east of the airfield (away from the densely urban areas), and to the north, east, and south over portions of the City of Wichita and City of Derby. Most of the land under these patterns is outside the area affected by 65 dB DNL because of the altitude and engine power settings at which the aircraft are flown.

Compatibility planning within areas adjacent to and surrounding McConnell AFB is under the jurisdiction of and a priority for the City of Wichita and Sedgwick County. Efforts have resulted in the adoption of both Airport Overlay and Air Force Base Protection overlay districts. These districts regulate land use and building/structure heights to ensure compatible future development around McConnell AFB.

A JLUS was completed in 2005 to evaluate the mission at McConnell AFB and long-term health and safety of both the civilian and military communities (HQ AMC 2011). The JLUS was completed when urban development was expanding and encroaching on McConnell AFB. Several recommendations from the JLUS focused on managing land use in the surrounding areas, including establishment of real estate disclosures to new property owners, initiating land protection and acquisitions in the APZs (to limit development), and maintaining flexibility in future land use and rezoning around the base (McConnell AFB 2005).

McConnell AFB released an AICUZ study in 2004 and identified industrial, residential, commercial, open space/low-density, public/semi-public, and recreational land uses within the CZ,

APZ I, and APZ II north and south of the runway. The study noted that the CZs should be clear of structures and occupied facilities because of the level of accident potential.

As reported in the 2004 AICUZ study, the Cessna Aviation operation, located in the northern CZ, is identified as incompatible, but the southern CZ is within the base and has no incompatible uses. In both the northern APZ I and southern APZ I, there is a total of 50 acres of incompatible residential land use and 55 acres of industrial. In both the northern APZ II and southern APZ II, there is a total of 386 acres of incompatible residential land use, 6 acres of commercial, 33 acres of industrial, and 5 acres of public-quasi-public (including Clark Elementary School) land uses (USAF 2004).

Currently, the City of Wichita and Sedgwick County have a unified zoning code, which governs land use surrounding most of the base. The code includes an Air Force Base Protection overlay district that allows the Zoning Administrator to approve an adjustment to property development standards within the district (Wichita/Sedgwick 2009). The City of Derby is responsible for the zoning of land within its jurisdictional boundaries. Parcels within APZ I and II are zoned Restricted Commercial, Warehousing, and Limited Manufacturing (B-5), with a few parcels in APZ II zoned Single-Family Residential (R-1) (Derby 2013).

The City of Derby and Wichita/Sedgwick Comprehensive Plans show expansion of urban development to the areas south and east of McConnell AFB as part of their future plans (HQ AMC 2011). The AICUZ study has recommended that future planning efforts use USAF land use compatibility guidelines to evaluate existing and future land use proposals.

#### *3.4.7.3 Auxiliary Airfields*

As described in Section 2.4.4.2.4, as part of the FTU scenario at McConnell AFB, KC-46A aircrews would use CSM, Forbes Field (FOE), and Wichita Mid-Continent Airport (ICT) airfields, which are all currently being used by KC-135 aircrews. Since there would be no construction or other ground disturbance at these locations and noise is not projected to substantially increase as a result of KC-46A operations, the auxiliary airfields are not evaluated for this scenario at McConnell AFB.

### **3.4.8 Infrastructure**

#### *3.4.8.1 Potable Water System*

Potable water is provided to McConnell AFB by the City of Wichita (Pettus 2013b). The city obtains water from Cheney Reservoir and the Equus Beds, which is a municipal well system. There is a 1 MG elevated storage tank on base. The condition of the base water supply system is considered adequate under current mission requirements (USAF 2012e). Water supply is reported to be sufficient. The base water system capacity is 2.6 MGD (Pettus 2013b). The average daily water use between 2011 and 2012 was 0.25 MGD. This is approximately 10 percent of base system capacity for average daily use. Peak water use occurs at McConnell AFB during the summer months; between 2011 and 2012, demand increased to 0.35 MGD, or 14 percent of the base system capacity (Pettus 2013b). During summer, high demands can diminish water pressure and volume (USAF 2012e).

#### *3.4.8.2 Wastewater*

The sanitary sewer system at McConnell AFB consists of a collection system only. All wastewater is discharged to the City of Wichita's system, which consists of four wastewater treatment facilities (Lower Arkansas River, Four Mile Creek, Cowskin Creek, and Mid-Continent Water Quality

Reclamation facilities) with a total capacity of 62.4 MGD. McConnell AFB does not have a dedicated industrial wastewater system. The wastes generated at the industrial facilities on base are of the type that can be discharged into the sanitary sewer system. The overall condition of the sanitary sewer system is considered adequate for current mission requirements (USAF 2012e).

McConnell AFB's wastewater collection system capacity is 4.3 MGD (Pettus 2013b). Capacity and discharge amounts are reported to be sufficient. The average daily wastewater discharge between 2012 and 2013 was 0.27 MGD, or 7 percent of the base's wastewater collection system capacity. The reported peak wastewater discharge was 1.15 MGD between 2012 and 2013, or 27 percent of base capacity (Pettus 2013b).

#### *3.4.8.3 Stormwater System*

Both stormwater run-off and other surface drainage waters at McConnell AFB are managed by a series of underground pipes, culverts, and natural channels. The main area of the base and the flightline are contained within a single basin that drains into McConnell Creek. There are no stormwater detention/retention basins in the main area of the base (USAF 2012e). The family housing area has an enclosed drainage system that drains to the main base via an open channel. In general, however, the storm drainage system provides adequate collection and retention facilities to manage water from developed areas and prevent site erosion to meet current mission requirements. The details of the stormwater permit for McConnell AFB are described in Section 3.4.4.2.1. The permit does not, however, authorize stormwater discharges associated with construction activities. A separate Notice of Intent and SWPPP must be filed for all new construction activities that disturb 1 or more acre.

#### *3.4.8.4 Electrical System*

Westar Energy supplies and regulates electrical service to McConnell AFB (USAF 2012e). Westar Energy provides a billing capacity to the base of 10.8 megavolts, with a summer peak capacity of 10.9 megavolts (Pettus 2013b). Two circuits provide electricity through above-ground and below-ground distribution. The electrical system is considered adequate to meet current mission requirements with planned improvements to switchgear, streetlights, manholes, and underground utility lines (USAF 2011b). Capacity and supply are reported to be sufficient. The McConnell AFB electric system capacity is approximately 120,000 MWH per year, or 329 MWH per day (USAF 2011b). Actual average electric demand between 2011 and 2012 was 55,242 MWH. Average daily demand between 2011 and 2012 was 152 MWH, with peak demand of 194 MWH occurring during the summer months (Pettus 2013b). The electrical system at McConnell AFB is currently operating at 47 percent of overall capacity and, at peak demand, is operating at 60 percent of overall capacity (USAF 2012e).

#### *3.4.8.5 Natural Gas System*

Natural gas is supplied by Southern Star through a pipeline near the base. The base distribution system was upgraded in the 1990s, and approximately 97 percent of the system is constructed with PVC piping (USAF 2012e). Capacity and supply are reported to be sufficient. The maximum natural gas system capacity for the base is 2,829 Mcf per day. The natural gas system at McConnell AFB is considered adequate to meet current and future mission requirements (USAF 2012e). Between October 2011 and September 2012, the base consumed 159,287 Mcf, with an average daily use of 436 Mcf and peak daily demand in December of 1,018 Mcf (Pettus 2013b). The natural gas system at McConnell AFB is operating at 15 percent of overall average daily use capacity, and at peak demand is operating at 36 percent of overall capacity (USAF 2012f).

#### *3.4.8.6 Solid Waste Management*

All municipal solid waste and C&D waste generated at McConnell AFB is collected and transported off base by a local qualified contractor. Municipal solid waste is hauled off to either Plumb Thicket or Red Carpet Landfills, and C&D waste is sent to either Brooks or Construction, Demolition & Recycle (CDR) Landfills (USAF 2012e). With a disposal area of approximately 960 acres, Plumb Thicket is expected to provide more than 50 years of disposal capacity for the Greater Wichita and South Central Kansas area. The Red Carpet Landfill is approximately 406 acres and has a remaining projected life of more than 20 years. Medical and infectious wastes are transported off base for incineration. The base also maintains an active recycling program. Solid waste management at McConnell AFB is considered adequate to meet current mission requirements (USAF 2012e).

#### *3.4.8.7 Transportation*

The main highway access to McConnell AFB is provided by I-35. Figure 2-14 displays the regional transportation network in the vicinity of McConnell AFB. I-35, also known as the Kansas Turnpike from the Oklahoma border through Wichita and on to Emporia, is a toll highway that passes approximately 1 mile west of McConnell AFB and extends southwest and northeast around Wichita.

The main arterial roadways providing access to McConnell AFB include Rock Road, Arnold Boulevard, East 31st Street, and George Washington Boulevard. Rock Road is a four-lane highway that operates along the eastern border of the base in a north-south direction. It extends from East Kellogg Drive to the north through Wichita and south to the town of Mulvane.

Multiple rail carriers operate lines through the Wichita area, including the Burlington Northern Santa Fe, Union Pacific, and the Kansas and Omaha. The Wichita area does not currently have passenger rail service. The nearest passenger rail location is an Amtrak in Hutchinson, Kansas, approximately 60 miles northwest of McConnell AFB. Wichita Transit offers multiple bus routes throughout the city, including a stop within walking distance of the West Gate of McConnell AFB (Wichita Transit 2013). Regional bus service is provided by Greyhound with a stop in downtown Wichita. Commercial airline service is available at ICT, approximately 15 miles to the west, with access to six national and regional carriers.

##### *3.4.8.7.1 Gate Access*

McConnell AFB has three entry gates (USAF 2013h). The main base entrance (East Gate) is located on Kansas Street, off Rock Road. The East Gate is open year round. A comprehensive antiterrorism gate project was completed for the East Gate that included a connection to Salina Drive to support Kansas Air National Guard (KANG) traffic to and from the west base KANG area (McConnell AFB 2011a). The military family housing gate is located off Rock Road on Arnold Street. This housing gate is also open year round. An alternate housing gate is located off of East 31st Street and is only used when the main housing gate is closed. The West Gate is located on Salina Road near its intersection with South George Washington Boulevard. This gate is the primary entrance to the KANG complex located on the base and is the gate that all contractors and vendors must enter through to receive inspections and identification badges.

##### *3.4.8.7.2 On-Base Traffic Circulation*

The on-base roadway network at McConnell AFB consists of 19 miles of paved roads and 7.5 miles of administrative roads. Passing north of the airfield, Salina Drive is the primary

connector between the KANG facilities on the west side of the base and the rest of the base. Wichita Street is a looping road along the eastern boundary, providing access to the southern portion of the base, Krueger Recreational Area, and the Robert J. Dole Community Center. Kansas Street provides access to the administrative and support facilities with secondary roads providing access off Kansas Street. The roadways are considered to be in good condition and efficiently maintained (McConnell AFB 2011a).

### **3.4.9 Hazardous Materials and Waste**

#### *3.4.9.1 Hazardous Materials*

Hazardous materials used by USAF and contractor personnel at McConnell AFB are managed in accordance with the HMMP and controlled by the HAZMART through the P2 program (McConnell AFB 2009). This process provides centralized management of the procurement, handling, storage, and issuance of hazardous materials and turn-in, recovery, reuse, or recycling of hazardous materials. The HAZMART process includes review and approval by USAF personnel to ensure users are aware of exposure and safety risks. Proper hazardous materials management will minimize chemical exposure to employees, reduce potential environmental impacts, and reduce costs for material purchasing and waste disposal.

##### *3.4.9.1.1 Aboveground and Underground Storage Tanks*

Bulk JP-8 fuel is stored in eight ASTs at three fuel stand areas at McConnell AFB (McConnell AFB 2013b). The bulk storage capacity of the eight ASTs is 4,821,600 gallons. The estimated annual JP-8 fuel consumption is 13,319,618 gallons (McConnell AFB 2013b).

There are 10 active and regulated USTs on McConnell AFB: 4 gasoline, 3 diesel fuel, and 3 JP-8 fuel (Pettus 2013c). The 3 JP-8 fuel USTs are associated with Building 1171 (McConnell AFB 2013b). McConnell AFB has one currently active and non-regulated heating oil tank. This heating oil tank is associated with Building 1176 and is scheduled for removal in 2013 (Pettus 2013c). The McConnell AFB SPCC Plan addresses on-base storage locations and the proper handling procedures for petroleum, oils, and lubricants (including JP-8 used by the aircraft) to minimize and respond to potential spills and releases (McConnell AFB 2013b).

##### *3.4.9.1.2 Toxic Substances*

The Asbestos Management and Operating Plan (McConnell AFB 2003) provides guidance on the management of asbestos. An asbestos facility register is maintained by the CE squadron. The design of building alteration projects and requests for self-help projects are reviewed to determine if ACM is present in the proposed work area. For each project on base, ACM wastes are removed by the contractor and disposed of in accordance with state and Federal regulations at a permitted off-base landfill.

The LBP Management and Operations Plan (McConnell AFB 2006b) provides guidance on the management of LBP. As with ACM, the CE squadron maintains an LBP facility register to document the location of LBP on McConnell AFB. The design of building alteration projects and requests for self-help projects are reviewed to determine if lead-containing materials are present in the proposed work area. LBP testing is conducted in buildings constructed prior to 1978 (Pettus 2013d). For every project on McConnell AFB, LBP wastes are removed by the contractor and disposed of in accordance with state and Federal regulations at a permitted off-base landfill.

Electrical transformers at McConnell AFB reportedly do not contain PCBs (Pettus 2013d).

### 3.4.9.2 Hazardous Waste Management

McConnell AFB is classified as an LQG (USEPA 2011). Typical hazardous wastes generated during maintenance and operations activities include flammable solvents, contaminated fuels, paint/coatings, stripping chemicals, toxic metals, waste paint-related materials, waste generated under the Comprehensive Universal Waste Program, and other miscellaneous wastes (USAF 2012e).

Hazardous wastes are managed in accordance with the McConnell AFB Instruction 32-7002 (McConnell AFB 2012b). This instruction describes the control and management of hazardous wastes from the point the material becomes a hazardous waste to the point of disposal. In 2011, 36,000 pounds of hazardous wastes were generated at McConnell AFB (USEPA 2011).

### 3.4.9.3 Environmental Restoration Program

The restoration program at McConnell AFB started in 1984 with a base-wide inventory that identified 13 sites for further investigation. At this time, there are 19 solid waste management units associated with 4 ERP sites and 10 Compliance Restoration Program sites associated with 9 ERP sites (McConnell AFB 2013c). The sites include landfills, fire training areas, fuel and mercury spills, and storage tanks. Primary contaminants in soil and groundwater include fuels, waste solvents, and dissolved-phase fuels and solvents.

## 3.4.10 Socioeconomics

Socioeconomics refers to features or characteristics of the social and economic environment. The main concern for socioeconomic resources is the change in personnel at McConnell AFB associated with the KC-46A FTU or MOB 1 scenario that could potentially impact population, employment, earnings, housing, education, and public services. Sedgwick County, Kansas, is the ROI for this analysis.

### 3.4.10.1 Baseline Conditions

#### 3.4.10.1.1 Population

In 2010, the population of Sedgwick County totaled 498,365 persons (U.S. Census 2010j). Between 2000 and 2010, the ROI population increased at an average annual rate of 1 percent, with a total increase of approximately 45,496 persons (U.S. Census 2000j, 2010j). The City of Wichita, the most populated city in Sedgwick County and the county seat, experienced an annual 1.1 percent increase over the 10-year period (U.S. Census 2000k, 2010k). The population in Kansas totaled 2,853,118 persons in 2010 and increased at an average annual growth rate of 0.6 between 2000 and 2010 (U.S. Census 2000l, 2010l) (see Table 3-34).

**Table 3-34. Population for the City of Wichita, Sedgwick County, and Kansas**

Location	2000	2010	Annual Percent Change (2000–2010)
City of Wichita	344,284	382,368	1.1%
Sedgwick County	452,869	498,365	1.0%
Kansas	2,688,418	2,853,118	0.6%

Source: U.S. Census 2000j, 2000k, 2000l, 2010j, 2010k, 2010l.

In 2012, McConnell AFB had a total work force of 4,358 personnel, which included 3,408 military personnel (full-time), 427 DoD civilians, and 523 other base personnel. In addition, there are an estimated 3,220 military dependents and family members associated with the full-time military personnel. Approximately 460 part-time Reservists are also located at

McConnell AFB, but because they are not considered full-time, they were not considered part of the work force for this analysis (McConnell AFB 2012c).

#### 3.4.10.1.2 Economic Activity (Employment and Earnings)

In 2011, the most recent data available, employment in Sedgwick County totaled 306,765 jobs (BEA 2012). The largest employment sectors in Sedgwick County were manufacturing (15.3 percent), followed by government and government enterprises (11.8 percent) and health care and social assistance (11.7 percent) (BEA 2012). Construction accounted for 5.2 percent of total employment. In 2012, the unemployment rate in Sedgwick County was 6.9 percent (BLS 2013a). The county unemployment rate was higher than the state (5.7 percent) but lower than the Nation (8.1 percent) (BLS 2013b). As of April 2013, the monthly unemployment rate (not seasonally adjusted) for Sedgwick County was estimated at 6.1 percent (BLS 2013c).

McConnell AFB is an important contributor to the Sedgwick County economy through employment of military and civilian personnel and expenditures for goods and services. The total economic impact of the base on the surrounding communities within a 50-mile radius during FY 2012 was \$619,100,000. The payroll for military, DoD civilians, and other base personnel was \$513,495,032. An estimated \$52,864,448 worth of construction expenditures also occurred on base in 2012 (McConnell AFB 2012c).

#### 3.4.10.1.3 Housing

Table 3-35 presents census-derived housing data for the City of Wichita and Sedgwick County. In 2010, Sedgwick County had 211,593 total housing units, of which 8.5 percent (18,091 units) were vacant (U.S. Census 2010j). Approximately 79 percent of the total housing units in Sedgwick County are located in the City of Wichita, and approximately 9.3 percent (15,492 units) were vacant at the time of the 2010 census (U.S. Census 2010k). Of the vacant housing units in the city and county, almost half were available for rent.

**Table 3-35. Housing Data for the City of Wichita and Sedgwick County**

Location	Housing Units	Occupied	Vacant	For Rent
City of Wichita	167,310	151,818	15,492	7,252
Sedgwick County	211,593	193,502	18,091	7,982

*Source:* U.S. Census 2010j, 2010k.

There are three housing opportunities available at McConnell AFB: government housing, unaccompanied housing, and housing in the local community. The current inventory of military family housing on base is 401 units (USAF 2013h). The authorized number of housing units is 364 units according to the 2009–2014 Housing Requirements and Market Analysis (HRMA). Military family housing at McConnell AFB was privatized in September 2013. At that time, the USAF and the Picerne Military Housing Associated with the Corvais Group started renovations on 207 homes and began building 157 new homes (USAF 2013h).

There are three dormitories with a total of 416 dormitory units for unaccompanied Airmen in the rank of E-1 to E-4 with less than 3 years of service on McConnell AFB (USAF 2013h). Housing in the local community is available for unaccompanied Airmen in the ranks of E-4 with 3 or more years of service. The current billeting capacity in the Visiting Quarters is 98 rooms. McConnell AFB has agreements with 25 local hotels to provide availability up to 150 rooms to support the base requirements.

#### 3.4.10.1.4 Education

There are 10 public school districts within Sedgwick County, Kansas. The largest school district in the county is the Wichita Public School District, which includes 57 elementary schools, 16 middle schools, and 12 high schools. Total enrollment in the Wichita Public School District during the 2012–2013 school year was approximately 46,872 students and 3,010 pre-kindergarten through twelfth grade teachers, for a student-to-teacher ratio of 15.6:1 (KSDOE 2013). The student-to-teacher ratio in all counties throughout Kansas ranged from 5.5:1 to 26.1:1 during the same school year (KSDOE 2013).

There are no DoD schools located on McConnell AFB. Students that reside on base are zoned for schools in the Derby, Kansas, school district. There are nine elementary schools, one middle school, one sixth grade center, and one high school in the Derby Public School District. Total enrollment in the Derby Public School District during 2012–2013 was approximately 6,402 students and 401 teachers (pre-kindergarten through grade 12), for a student-to-teacher ratio of 16.0:1 (KSDOE 2013).

#### 3.4.10.1.5 Public Services

Public services in Sedgwick County include law enforcement, fire protection, emergency medical services, and medical services. The Sedgwick County Sheriff's Office is responsible for the law enforcement segment of public safety within the county. In addition to the Sheriff's Office, there are numerous law enforcement agencies in the area (Sedgwick County 2012). Sedgwick County Fire District 1 is composed of nine fire stations, staffed 24 hours a day and located throughout Sedgwick County. Of the 20 cities in Sedgwick County, 10 are in Fire District 1. This covers a response area of 631 square miles and approximately 85,000 citizens. Fire Station 36 provides fire suppression and medical response services to southeastern Sedgwick County and has an automatic aid agreement with McConnell AFB (Sedgwick County 2012).

In addition to fire suppression, Sedgwick County Emergency Medical Service provides emergency response and scheduled transfers for a population of approximately 498,000 citizens in a geographic area of approximately 1,000 square miles (Sedgwick County 2012). There are 17 individual hospitals and approximately 3,100 licensed hospital beds in Sedgwick County.

#### 3.4.10.1.6 Base Services

At McConnell AFB, the 22nd Medical Group delivers and arranges comprehensive medical, dental, and public health care to an eligible population of active-duty and retired military personnel and their families. Medical facilities include day-to-day outpatient medical care, optometry, dental care, and laboratory uses.

Other base services include dining facilities, recreation and fitness centers, and youth and family services. Youth and family services include a CDC, family child care, youth center, and a school-age program. The CDC provides care for children 6 weeks to 5 years old. Availability varies throughout the year, but as of November 2012, there were available openings at the CDC and for the school-age program (USAF 2012f).

### 3.4.11 Environmental Justice and the Protection of Children

Sedgwick County represents the region of comparison for evaluating disproportionate effects (in Chapter 4) on populations of concern for environmental justice and for children. Table 3-36 shows that the proportion of minority persons in Sedgwick County is much higher than in the State of Kansas, but lower than in the Nation as a whole. Low-income persons compose a

slightly higher proportion of the county's population than in the State of Kansas, but a proportion typical of the Nation. The proportion of children in the county population is slightly higher than the State of Kansas and the Nation as a whole.

**Table 3-36. Characterization of Environmental Justice Populations at McConnell AFB**

Location	Total Population	Minority		Low-Income <sup>a</sup>	Youth	
		Number	Percent	Percent	Number	Percent
Sedgwick County	498,365	149,931	30.08%	14.00%	135,376	27.16%
Kansas	2,853,118	622,579	21.82%	12.60%	726,939	25.48%
United States	308,745,538	111,927,986	36.25%	14.30%	74,181,467	24.03%

<sup>a</sup> 2007–2011 estimate; all other values based on 2010 census.

**Source:** U.S. Census 2010j, 2010l, 2012.

# CHAPTER 4

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## ENVIRONMENTAL CONSEQUENCES





## **4.0 ENVIRONMENTAL CONSEQUENCES**

This chapter presents the analysis of the potential environmental consequences from the proposed beddown of KC-46A aircraft in support of the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) missions at four different active-duty Air Force Bases (AFBs). As in Chapter 3, the expected geographic scope of the potential environmental consequences is identified as the region of influence (ROI). This chapter considers both direct and indirect effects of implementation of the action alternatives. Resource definitions, as well as the regulatory setting and methodology of analysis, are located in Volume II, Appendix B. Baseline conditions (refer to Chapter 3) of each relevant environmental resource area are described to provide the public and agency reviewers a meaningful point from which they can compare future potential environmental, social, and economic effects. Cumulative effects are described in Chapter 5.

### **4.1 ALTUS AIR FORCE BASE (FTU OR MOB 1)**

This section of Chapter 4 presents the operational and environmental factors specific to Altus AFB. Sections 2.4.1.2 and 2.4.1.3, respectively, describe the facilities and infrastructure, personnel, and flight operations requirements of the FTU and MOB 1 scenarios and the specific actions at Altus AFB that would be required to implement each scenario. As described in Section 4.5, the No Action Alternative would mean that neither the KC-46A FTU nor the KC-46A MOB 1 scenario would be implemented at Altus AFB at this time. In addition to no facility or personnel changes, there would be no change in based aircraft at Altus AFB; operations at Altus AFB would continue as described for baseline conditions. The 97th Air Mobility Wing (AMW) would continue to fly the training mission with a Primary Aerospace Vehicles Authorized (PAA) of 18 KC-135 aircraft and the personnel described under baseline conditions.

#### **4.1.1 Noise**

##### *4.1.1.1 FTU Scenario Noise Consequences*

###### *4.1.1.1.1 Base Vicinity*

The noise levels of the KC-46A aircraft are slightly less than the KC-135 and C-17 aircraft that currently operate at Altus AFB. Table 4-1 lists the noise levels generated by overflights of all three aircraft types in typical landing and takeoff configurations. Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in Table 4-1. The KC-46A is noticeably quieter than a C-17 in both landing and takeoff configuration. The difference between a KC-135 and a KC-46A during approach would be noticeable, but takeoff noise levels for the two aircraft would be difficult to distinguish.

The KC-46A is expected to use the same flying procedures (e.g., ground tracks, altitude profiles) as are currently flown by KC-135. Aircrews associated with the KC-46A FTU scenario would frequently practice tactical procedures in which the aircraft climbs or descends in the immediate vicinity of the airfield. This training prepares aircrews for operations in forward operating locations where being close to the ground exposes the aircraft to additional risk from ground-based threats. Relative to a standard landing or takeoff, a tactical landing emphasizes low-altitude flying and produces noise near the airfield. It is estimated that about 90 percent of KC-46A training sortie takeoffs and 80 percent of training sortie landings would be conducted using tactical procedures. The KC-46A FTU would mirror ongoing tanker operations making use

of traffic patterns to the west, as well as to the east of the base. Flight patterns to the west of the base began being flown in 2010 to increase peak operational capacity of the base.

**Table 4-1. Aircraft Noise Level Comparison at Altus AFB**

Aircraft	Power Setting	Sound Exposure Level at Overflight Distance (in decibels)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-46A	60% N1	96	91	85	79	70	61
C-17	1.15 EPR	108	102	95	88	77	68
KC-135	65% NF	100	95	90	84	75	67
Takeoff							
KC-46A	92% N1	107	102	96	88	78	69
C-17	1.42 EPR	114	109	103	97	88	81
KC-135	90% NF	105	100	95	90	81	73

**Note:** Aircraft airspeed is 160 knots. Aircraft operate at various airspeeds in and around the airfield.

**Key:** Power Units: N1 – engine speed at Location No. 1; EPR – engine pressure ratio; NF – engine fan revolutions per minute

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results.

Aircrews associated with the FTU scenario would fly roughly 7.5 sorties per flying day, and each sortie would include about 10 closed patterns (i.e., approaches to airfield followed by maneuver for another approach). Addition of the FTU scenario would increase the total number of annual airfield operations flown at Altus AFB by about 38 percent from about 109,459 to about 150,823. Under normal circumstances, aircrews associated with the FTU would only fly on non-holiday weekdays, mirroring current flying operations.

Night flying is an important component of military readiness; approximately 20 percent of the total KC-46A operations would be flown between 10:00 P.M. and 7:00 A.M. Currently, about 12 percent of airfield operations at Altus AFB are conducted during the night. Noise generated between 10:00 P.M. and 7:00 A.M. has the potential to be particularly disruptive and all such noise events are assessed a 10 decibel (dB) penalty in calculation of the day-night average sound level (DNL) noise metric.

Noise levels near Altus AFB were calculated using NOISEMAP (Version 7.2). Noise modeling was conducted to account for location-specific effects of terrain and ground impedance on noise propagation. Details of the methods used to calculate noise levels and the population affected by elevated noise can be found in Volume II, Appendix B, Section B.1.3. Annoyance is a subjective response that is often triggered by interference of noise with activities. Individuals engaged in activities more easily disrupted by noise (e.g., conversation, sleeping, or watching television) are more likely to become annoyed than others. Although the reaction of an individual to noise depends on a wide variety of factors, social surveys have found a correlation between the time-averaged noise level as measured in DNL and the percentage of the affected population that is highly annoyed (see Volume II, Appendix C, Section C.1.3.1). It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed by noise, and this has been adopted by the U.S. Air Force (USAF) and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.1.7 and Volume II, Appendix C, Section C.1.3.2). Under the FTU scenario, approximately 5,158 total off-base acres and 138 total off-base residents would be affected by noise levels greater than 65 dB DNL (see Table 4-2). This is an increase of 584 off-base acres and an estimated 17 off-base residents relative to baseline conditions. Figure 4-1 compares DNL contours under baseline conditions to the noise contours under the proposed FTU scenario. C-17 aircraft operations are the dominant noise source under both the baseline and the proposed action conditions.

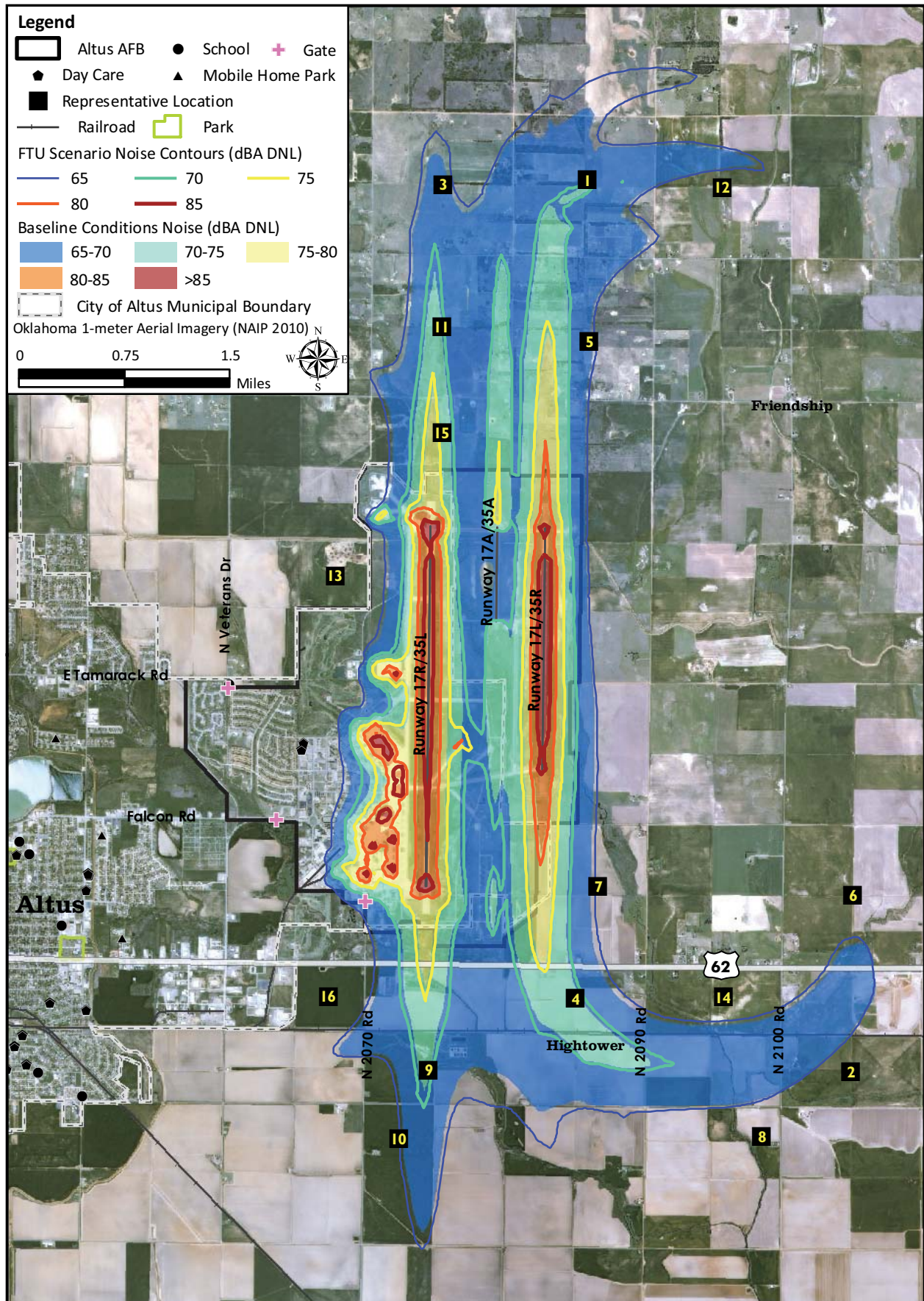


Figure 4-1. KC-46A FTU Scenario and Baseline Noise Contours at Altus AFB

According to current U.S. Department of Defense (DoD) policy, persons exposed to 80 dB DNL over a very long period, with no barriers to the noise, are at an increased risk of noise-induced permanent threshold shift, commonly referred to as hearing loss (USD 2009). The potential for hearing loss due to noise is discussed in Volume II, Appendix C, Section C.2.4. Under the FTU scenario, noise levels greater than 80 dB DNL would affect 12 acres of land outside of Altus AFB (an increase of 7 acres relative to baseline conditions). However, Census data and aerial photography indicate no residences exist in the affected area (see Table 4-2). On base, a total of 5 structures (1 more than under baseline conditions) would be affected by noise levels of 80 dB DNL or greater under the FTU scenario. None of the structures affected are residential. Hearing loss risk among people working in high-noise environments on Altus AFB would continue to be assessed and managed in accordance with DoD, Occupational Safety and Health Administration (OSHA), and National Institute for Occupational Safety and Health (NIOSH) regulations regarding occupational noise exposure.

**Table 4-2. KC-46A FTU and MOB 1 Scenario Noise Impacts Relative to Baseline Noise at Altus AFB**

Noise Level (dB DNL)	Baseline Conditions			FTU Scenario			MOB 1 Scenario		
	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	97	3,433	961	109	3,802	802	100	3,508	906
70–74	22	945	914	26	1,107	1,008	24	1,004	930
75–79	2	191	627	3	237	650	3	209	671
80–84	0	5	467	0	12	457	0	8	481
≥85	0	0	87	0	0	182	0	0	119
<b>Total</b>	<b>121</b>	<b>4,574</b>	<b>3,056</b>	<b>138</b>	<b>5,158</b>	<b>3,099</b>	<b>127</b>	<b>4,729</b>	<b>3,107</b>

Noise conditions at several representative locations surrounding Altus AFB are presented in Table 4-3 for baseline conditions and the FTU scenario. These points, which are shown on Figure 4-1, are geographic center points of U.S. Census subdivisions, and therefore do not represent specific noise-sensitive receptors. Noise levels would change by 1 dB DNL or less under the FTU scenario. The KC-46A FTU scenario would be additive to the current mission at Altus AFB, resulting in an increase in DNL in the base vicinity. For each location, a range of sound exposure levels (SELs) is provided for the loudest five flight procedures experienced at that location. Note that ground tracks and aircraft configuration vary from flight to flight based on winds and other factors, so flight procedures could be louder or quieter than the SEL values listed in Table 4-3. The range of SELs of the loudest five overflights would remain unchanged at all of the locations except Location 8. At Location 8, a KC-46A departure operation is one of the loudest five operations. Table C-1-1 in Volume II, Appendix C, Attachment C-1, details the major noise contributors at each location under each scenario at Altus AFB.

Construction and demolition (C&D) activities in support of the proposed beddown would be conducted in the context of an active AFB where aircraft and other types of noise are a normal part of the environment. Although equipment would be muffled, construction activities unavoidably generate localized increases in noise qualitatively different from aircraft noise. For example, a typical backhoe, dozer, and crane generate up to approximately 78, 82, and 81 dB, respectively, at a distance of 50 feet (FHWA 2006). Construction noise would be minimized in accordance with local regulations and would be temporary and intermittent, lasting only the duration of the project. Furthermore, construction activities would be expected to take place during normal working

hours (i.e., 7:00 A.M. to 5:00 P.M.). Some people living or working near the construction sites may notice and be annoyed by the noise, but noise impacts would not be substantial enough to be considered significant.

**Table 4-3. KC-46A FTU and MOB 1 Scenario Noise Levels at Representative Locations Near Altus AFB**

Location ID	Baseline		FTU Scenario		MOB 1 Scenario	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	69	99–107	69	99–107	69	99–107
2	62	91–97	63	91–97	62	91–97
3	66	99–102	67	99–102	66	99–102
4	71	97–102	71	97–102	71	97–102
5	65	98–101	66	98–101	66	98–101
6	62	92–97	63	92–97	63	92–97
7	67	98–101	68	98–101	67	98–101
8	61	90–94	62	91–94	61	91–94
9	71	103–104	71	103–104	71	103–104
10	64	96–101	65	96–101	65	96–101
11	70	102–104	71	102–104	70	102–104
12	63	92–98	64	92–98	63	92–98
13	58	91–93	58	91–93	58	91–93
14	63	93–98	63	93–98	63	93–98
15	73	105–106	74	105–106	73	105–106
16	60	90–95	61	90–95	60	90–95

<sup>a</sup> “Top 5 SELs” refers to the range of loudest five event types experienced at the location (see Attachment C-1).

#### 4.1.1.1.2 Auxiliary Airfields

Aircrews operating the KC-46A would make use of airfields other than Altus AFB to provide diverse training experiences. The KC-46A would be operated at the same airfields used by Altus-based KC-135 aircraft currently, and at about the same frequency. As shown in Table 4-1, KC-135 aircraft are slightly louder than KC-46A aircraft. Aircrews operating the KC-46A would use the same flight routes to access the auxiliary airfields and would operate on the same flight tracks that are used by the KC-135 aircraft while operating at the auxiliary airfields. Auxiliary airfields would generally not be used between 10:00 P.M. and 7:00 A.M. Additional data supporting conclusions about expected noise level increases at the auxiliary airfields can be found in Volume II, Appendix B, Section B.1.3.2.

**Rick Husband Amarillo International Airport (AMA), TX.** It is estimated that 517 KC-46A annual airfield operations would be conducted at AMA. Additional flying would take place in the context of the current annual 54,115 airfield operations. In this context, proposed KC-46A activity would not be expected to have any noticeable effect on noise levels. A mathematical comparison was made of existing and proposed operations levels, and it was found that DNL at locations near the airfield would increase by less than 0.5 dB (see Volume II, Appendix B, Section B.1.3.2). People living near the airfield may visually notice the KC-46A overflights, but no substantive noise impacts would be expected to occur.

**Clinton-Sherman Industrial Airpark (CSM), OK.** CSM currently supports 28,485 annual airfield operations; under the KC-46A FTU scenario, an additional 3,681 annual airfield operations would be flown at the airfield. Mathematical comparison of existing and proposed operations indicate that an

increase of greater than 0.5 dB DNL would be possible as a result of the proposed KC-46A FTU operations. The program NOISEMAP was run to quantify impacts. The number of off-airport acres affected by noise levels at or above 65 dB DNL would increase by 5 acres from 1,607 to 1,612, an increase of 0.3 percent. In the context of ongoing flying activity, KC-46A operations associated with the FTU scenario would have no substantive noise impacts.

**Fort Worth Alliance Airport (AFW), TX.** Aircrews associated with the KC-46A FTU scenario would fly about 2,170 annual airfield operations at AFW, which currently supports 100,756 annual operations. The KC-46A operations would be expected to increase the noise level by less than 0.5 dB DNL and no substantive noise impacts would be expected to occur.

**Lubbock Preston Smith International Airport (LBB), TX.** Aircrews associated with the KC-46A FTU scenario would be expected to conduct about 148 annual operations at LBB, which currently supports about 67,919 annual airfield operations. These additional operations would be expected to increase noise levels near the airfield by less than 0.5 dB DNL. In the context of ongoing operations, the proposed KC-46A operations would not be expected to have any substantive noise impacts.

#### *4.1.1.2 MOB 1 Scenario Noise Consequences*

KC-46A MOB 1 aircrews would use flight procedures similar to those currently used by KC-135 aircraft based at Altus AFB. Under the MOB 1 scenario, tactical operations would make up about 25 percent of total takeoffs and 40 percent of initial landings. These operations would be less frequent than they would be for the FTU. The 36 PAA that would beddown at Altus AFB under the MOB 1 scenario would conduct about 33,710 airfield operations per year. These operations would be conducted in addition to the 109,459 operations per year ongoing currently. Under the MOB 1 scenario, flying would be conducted on some weekend days, as part of Reserve unit training. In total, KC-46A aircrews would fly training sorties on 312 days per year. Mission sorties could take place on any day of the year, but would not include multiple training approaches to the airfield.

Aircrews associated with the MOB 1 scenario would conduct a lower percent of total KC-46A operations at night than under the FTU scenario. Under the MOB 1 scenario, about 10 percent of KC-46A operations would be flown during the period between 10:00 P.M. and 7:00 A.M. This equates to about two initial approaches and 18 closed patterns between 10:00 P.M. and 7:00 A.M. per flying day.

Noise levels near Altus AFB under the MOB 1 scenario were calculated using the computer program NOISEMAP (Version 7.2) and include the location-specific effects of terrain and ground impedance. Approximately 4,729 total off-base acres and 127 total off-base residents would be affected by noise levels greater than 65 dB DNL (see Table 4-2). This would be a net increase of 155 off-base acres and 6 off-base residents relative to baseline conditions. Figure 4-2 compares DNL noise contours under baseline conditions to noise contours under the proposed MOB 1 scenario.

Noise levels greater than 80 dB DNL would affect 8 acres of land outside of Altus AFB, but interpretation of aerial photography and U.S. Census data indicate no residents in the affected area (see Table 3-2). On base, four nonresidential buildings would be affected by noise levels of 80 dB or greater. The area affected by high noise levels on base is different under the MOB 1 scenario than under the FTU scenario because KC-46A static engine runs would be conducted at different locations, causing a difference in the noise contours. Hearing loss risk among people working in high-noise environments on Altus AFB would continue to be assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

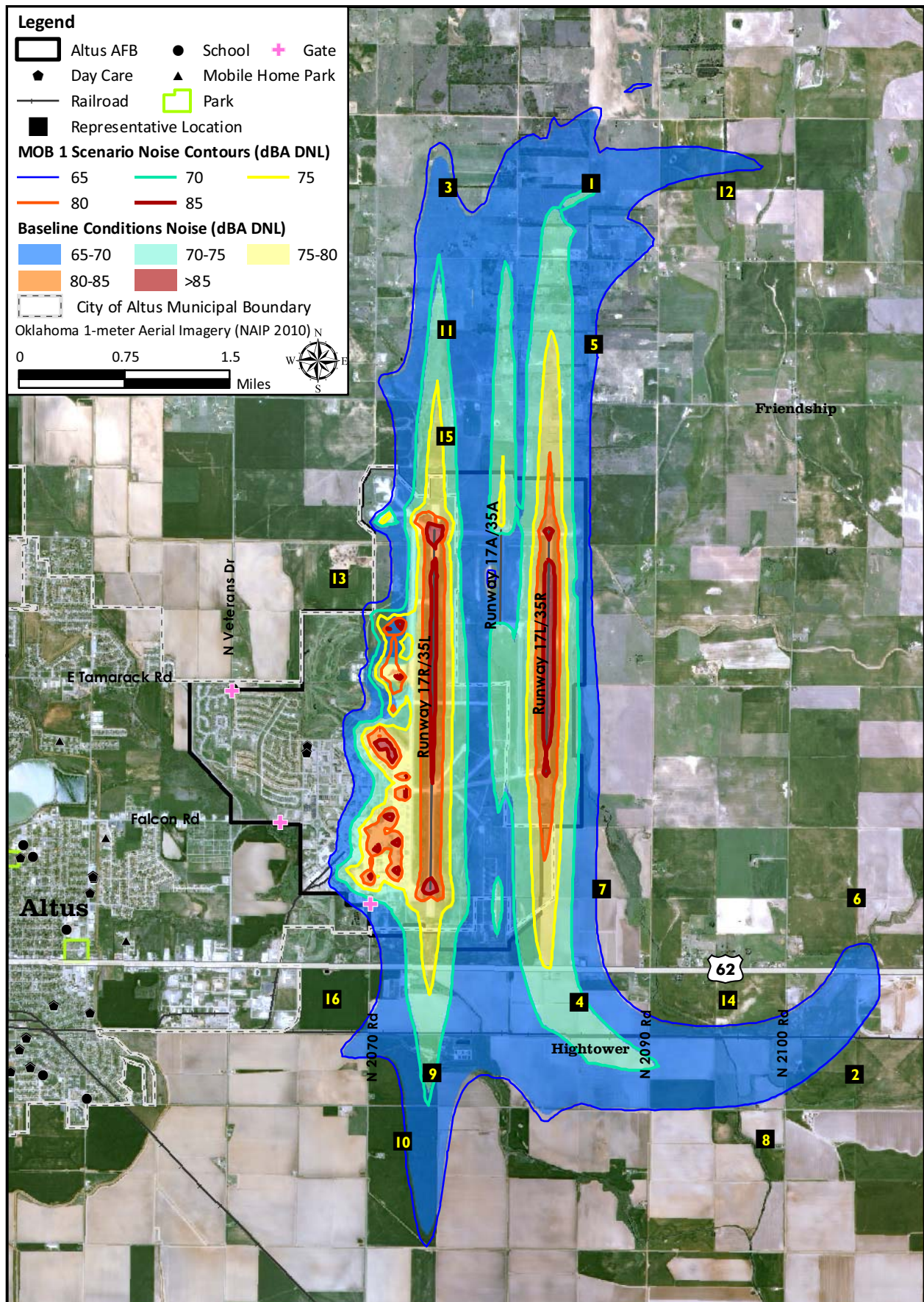


Figure 4-2. KC-46A MOB 1 Scenario and Baseline Noise Contours at Altus AFB

DNL values and the SEL generated by the loudest five types of overflights at several representative locations under the MOB 1 scenario are listed in Table 4-3 and depicted on Figure 4-2. The representative locations were established based on central points of U.S. Census subdivisions. DNL would increase by 1 dB at 3 of the 16 locations, and would remain unchanged at the other 13 locations.

The range of SELs of the loudest five overflights would remain unchanged at all locations except Location 8. At Location 8, a KC-46A departure operation is one of the loudest five operations. At each location, the dominant noise sources are C-17 closed pattern operations and transient T-38 closed pattern operations. A more detailed description of the major noise-contributing operations at each location can be found in Table C-1-1 in Volume II, Appendix C, Attachment C-1.

As described in Section 2.3.3, Initial Operational Test and Evaluation (IOT&E) operations would be conducted at the MOB 1 location. IOT&E operations would be expected to be indistinguishable to members of the public from standard MOB 1 flying operations and would taper off before the MOB 1 reaches full operations tempo such that operations counts listed for MOB 1 would not be exceeded.

C&D noise under the MOB 1 scenario would produce similar or higher impacts compared to the FTU scenario, as this scenario would require a larger amount of C&D activity. Due to the temporary and intermittent nature of C&D and its associated noise level, noise impacts would not be substantial enough to be considered significant.

#### **4.1.2 Air Quality**

The air quality analysis estimated the magnitude of emissions that would result from implementation of the proposed KC-46A construction and operational activities at Altus AFB. The estimation of proposed operational emissions is based on the net change in emissions between existing aircraft operations and the projected KC-46A operations. Volume II, Appendix D, Section D.1.1, of this Final Environmental Impact Statement (EIS) includes estimations of criteria pollutant emissions, hazardous air pollutants (HAPs), and greenhouse gases (GHGs) from proposed sources at Altus AFB. GHGs are reported as carbon dioxide equivalent (CO<sub>2e</sub>).

Air quality impacts from the KC-46A scenarios at Altus AFB were reviewed for significance relative to Federal, state, and local air pollution standards and regulations. In the case of criteria pollutants for which the ROI is in attainment of the National Ambient Air Quality Standards (NAAQS), the analysis used the Prevention of Significant Deterioration (PSD) threshold for new major sources of 250 tons per year of that pollutant as an indicator of significance or non-significance of projected air quality impacts. In the case of criteria pollutants for which the project region does not attain an NAAQS, the analysis used the pollutant threshold that requires a conformity determination for that region. If proposed emissions exceed a PSD or conformity threshold, further analysis was conducted to determine whether impacts were significant. In such cases, if proposed emissions (1) would not be expected to contribute to an exceedance of an ambient air quality standard or (2) conform to the approved State Implementation Plan (SIP), then impacts would be less than significant.

The project region within Jackson County and the areas surrounding three (CSM, LBB, and AMA) of the four auxiliary airfields attain all of the NAAQS. Therefore, the analysis used the PSD threshold of 250 tons per year of a pollutant as an indicator of significance of projected air quality impacts within these areas. Since the region that encompasses the AFW auxiliary airfield is in serious nonattainment of the ozone (O<sub>3</sub>) NAAQS, the analysis used the applicable conformity thresholds for that region as both an indicator of significance (50 tons per year of

volatile organic compounds [VOCs] and nitrogen oxides [NO<sub>x</sub>]) and to determine whether a *de minimis* finding may be made or a positive general conformity determination is required.

**Construction** – The KC-46A scenarios at Altus AFB would require construction and/or renovation of airfield facilities, including training facilities, hangars, taxiways, and maintenance and fueling facilities. Air quality impacts resulting from the proposed construction activities would occur from (1) combustive emissions resulting from the use of fossil fuel-powered equipment and (2) fugitive dust emissions (particulate matter less than or equal to 10 microns [PM<sub>10</sub>] or 2.5 microns [PM<sub>2.5</sub>] in diameter) resulting from the operation of equipment on exposed soil. Construction activity data were developed to estimate proposed construction equipment usages and associated combustive and fugitive dust emissions for each project alternative.

Factors needed to derive construction source emission rates were obtained from the *Compilation of Air Pollutant Emission Factors*, AP-42, Volume I (USEPA 1995); the U.S. Environmental Protection Agency (USEPA) NONROAD2008a model for nonroad construction equipment (USEPA 2009a); and the USEPA MOVES2010b model for on-road vehicles (USEPA 2013b).

Inclusion of standard construction practices and Leadership in Energy and Environmental Design (LEED) Silver certification into proposed construction activities would potentially reduce fugitive dust emissions generated from the use of construction equipment on exposed soil. The standard construction practices for fugitive dust control could include the following:

1. Use water trucks to keep areas of vehicle movement damp enough to minimize the generation of fugitive dust.
2. Minimize the amount of disturbed ground area at a given time.
3. Suspend all soil disturbance activities when winds exceed 25 miles per hour or when visible dust plumes emanate from the site and stabilize all disturbed areas with water application.
4. Designate personnel to monitor the dust control program and to increase watering, as necessary, to minimize the generation of dust.

**Operations** – Sources associated with operation of the proposed FTU and MOB 1 scenarios at Altus AFB would include (1) operations and engine maintenance/testing of aircraft, (2) onsite privately owned vehicles (POVs) and government motor vehicles (GMVs), (3) offsite POV commutes, (4) aerospace ground equipment (AGE), (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and other sources. Operational data used to calculate projected KC-46A aircraft emissions were obtained from data used in the project noise analyses (see Section 4.1.1). Factors used to calculate combustive emissions for the KC-46A aircraft were based on emissions data developed by Pratt and Whitney for the PW4062 engine (ICAO 2013b). The operational times in mode for the KC-46A engine were based on those currently used for the KC-135 aircraft (Air Force Civil Engineer Center 2013).

Emissions from non-aircraft sources resulting from the proposed FTU and MOB 1 scenarios were estimated by multiplying existing emissions for these sources at Altus AFB by the ratio of total employment populations associated with each proposed scenario and baseline conditions at Altus AFB. The emission estimations also simulated the gradual turnover of these sources in the future to vehicle and equipment fleets with new and cleaner USEPA emission standards. The air quality analysis used calendar year (CY) 2012 to define existing emissions, as it included the most recent calendar year of operational activities at Altus AFB (see Table 3-5). Emissions from the usage of AGE by the KC-46A were based on AGE usages for existing C-17 and KC-135 aircraft at Altus AFB.

The analysis of proposed aircraft operations is limited to operations that occur within the lowest 3,000 feet of the atmosphere, as this is the typical depth of the atmospheric mixing layer where the release of aircraft emissions would affect ground-level pollutant concentrations. In general, aircraft emissions released above the mixing layer would not appreciably affect ground-level air quality.

#### 4.1.2.1 FTU Scenario Air Quality Consequences

Table 4-4 presents estimates of emissions from construction activities that would result from implementing the FTU scenario at Altus AFB. These data show that, for each year of construction, total emissions would fall well below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions resulting from the FTU scenario would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the operation of equipment on unpaved surfaces.

**Table 4-4. Annual Construction Emissions Under the FTU Scenario at Altus AFB**

Year/Construction Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
<b>CY 2014</b>							
Demolition	0.01	0.04	0.10	0.00	0.07	0.02	15.19
Building Renovations/Additions	0.05	0.30	0.53	0.01	0.09	0.05	72.01
<b>Total CY 2014</b>	<b>0.06</b>	<b>0.34</b>	<b>0.63</b>	<b>0.02</b>	<b>0.16</b>	<b>0.07</b>	87.20
<b>CY 2015</b>							
Building Renovations/Additions	0.17	0.97	1.82	0.05	0.31	0.17	260.22
<b>Total CY 2015</b>	<b>0.17</b>	<b>0.97</b>	<b>1.82</b>	<b>0.05</b>	<b>0.31</b>	<b>0.17</b>	260.22
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	N/A

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

The air quality impact analysis of the FTU scenario at Altus AFB is based on the net increase in emissions associated with the beddown of eight KC-46A aircraft. To produce a conservative analysis, it is assumed that all KC-46A aircraft associated with the FTU scenario would become operational at Altus AFB in CY 2016.

Table 4-5 summarizes the annual emissions that would result from KC-46A FTU operations at Altus AFB. These data show that the increase in emissions from the addition of eight KC-46A aircraft at Altus AFB would not exceed 250 tons per year for VOCs, carbon monoxide (CO), sulfur oxides (SO<sub>x</sub>), PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, the FTU scenario would produce less than significant impacts on these pollutant levels. However, these data also show that the increase in NO<sub>x</sub> emissions from the FTU scenario would exceed 250 tons per year. KC-46A aircraft operations and on-wing engine testing activities are the primary contributors to these emission increases.

The NO<sub>x</sub> emission increases that would result from the FTU scenario would amount to 99 percent of the total NO<sub>x</sub> emissions generated from current operations at Altus AFB. The majority of proposed NO<sub>x</sub> emissions generated by the FTU scenario would result from KC-46A aircraft operations up to an altitude of 3,000 feet above ground level (AGL) and across several square miles that make up the Altus AFB airspace and adjoining aircraft flight patterns. These emissions would be adequately dispersed through this volume of atmosphere to the point that

they would result in no substantial ground-level impacts in a localized area. Jackson County generates relatively low amounts of NO<sub>x</sub> emissions (see Table 3-4) and it attains all NAAQS by wide margins. Therefore, proposed NO<sub>x</sub> emissions resulting from the FTU scenario, in combination with existing emissions, would likely not be substantial enough to contribute to an exceedance of an ambient air quality standard. Therefore, KC-46A operations associated with the FTU scenario at Altus AFB would produce less than significant air quality impacts.

**Table 4-5. Annual Operations Emissions Under the FTU Scenario at Altus AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	34.63	157.55	1,034.50	54.09	3.35	2.84	150,110
On-Wing Aircraft Engine Testing – KC-46A	14.14	48.41	23.62	1.88	0.17	0.15	5,226
Aerospace Ground Support Equipment – KC-46A	0.13	0.98	1.11	0.04	0.16	0.15	1,094
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	115,409
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	60,195
Transient Aircraft	1.38	5.07	3.15	0.31	0.77	0.77	530
On-Wing Aircraft Engine Testing – C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,633
On-Wing Aircraft Engine Testing – KC-135	0.11	14.32	7.07	0.82	0.05	0.05	2,071
Aerospace Ground Support Equipment – Existing Aircraft	0.59	4.27	4.83	0.19	0.71	0.65	4,741
Government Motor Vehicles	0.08	0.79	1.70	0.00	0.09	0.08	510
Privately Owned Vehicles – On Base	0.13	6.91	0.87	0.02	0.08	0.04	1,189
Privately Owned Vehicles – Off Base	0.38	20.45	2.28	0.06	0.33	0.14	3,389
Nonroad Equipment	5.35	74.86	2.28	0.49	0.29	0.29	2,523
Mobile Fuel Transfer Operations	0.11	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	2.21	6.77	11.16	0.20	1.21	0.54	<sup>a</sup>
<b>Total Altus AFB Emissions – FTU Scenario</b>	<b>90.06</b>	<b>737.82</b>	<b>2,124.08</b>	<b>163.02</b>	<b>266.31</b>	<b>264.79</b>	<b>348,618</b>
<b>Existing Altus AFB Emissions</b>	<b>55.39</b>	<b>573.25</b>	<b>1,069.38</b>	<b>106.96</b>	<b>262.74</b>	<b>261.86</b>	<b>191,769</b>
<b>Altus AFB FTU Scenario Minus Existing Emissions</b>	<b>34.67</b>	<b>164.57</b>	<b>1,054.70</b>	<b>56.06</b>	<b>3.58</b>	<b>2.93</b>	<b>156,850</b>
<b>FTU Scenario Net Emissions Increase Fraction of Existing Emissions</b>	<b>0.63</b>	<b>0.29</b>	<b>0.99</b>	<b>0.52</b>	<b>0.01</b>	<b>0.01</b>	<b>0.82</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

## 4.1.2.1.1 Auxiliary Airfields

Emissions from KC-46A FTU operations would occur within the immediate area of the auxiliary airfields and aircraft flight routes between these areas and Altus AFB. Table 4-6 summarizes the annual emissions that would result from KC-46A operations proposed at each auxiliary airfield associated with the FTU scenario at Altus AFB. These data show that the proposed increase in emissions at CSM, LBB, and AMA would not exceed a PSD threshold. In addition, the increase in proposed emissions at AFW would not exceed an applicable PSD or conformity threshold. Therefore, KC-46A operations at all four auxiliary airfields associated with the FTU scenario would produce less than significant air quality impacts and a general conformity *de minimis* determination may be made for the projected increases in NO<sub>x</sub> and VOC emissions at AFW.

**Table 4-6. Annual Emissions from KC-46A FTU Operations at Auxiliary Airfields Near Altus AFB, CY 2016**

Auxiliary Airfield	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Clinton Sherman Industrial Airpark (CSM)	0.35	4.43	79.53	4.03	0.24	0.20	11,242
Rick Husband Amarillo International Airport (AMA)	0.05	0.64	11.59	0.58	0.03	0.03	1,627
Lubbock Preston Smith International Airport (LBB)	0.10	1.32	23.66	1.20	0.07	0.06	3,344
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>
Fort Worth Alliance Airport (AFW)	0.10	1.32	23.66	1.20	0.07	0.06	3,344
<b>Conformity/PSD Threshold</b>	<b>50</b>	<b>250</b>	<b>50</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

## 4.1.2.2 MOB 1 Scenario Air Quality Consequences

Table 4-7 presents estimates of emissions from construction activities that would result from implementation of the MOB 1 scenario at Altus AFB. These data show that, for each year of construction, total emissions would fall well below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions resulting from the MOB 1 scenario would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the operation of equipment on unpaved surfaces.

**Table 4-7. Annual Construction Emissions Under the MOB 1 Scenario at Altus AFB**

Year	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
CY 2014	1.63	27.19	13.37	0.35	25.81	3.68	2,017.41
CY 2015	0.33	4.26	3.10	0.09	2.15	0.46	475.41
CY 2016	0.54	2.96	5.87	0.17	8.04	1.26	900.39
CY 2018	0.01	0.26	0.05	0.00	0.04	0.01	11.27
CY 2021	0.14	7.47	0.17	0.01	0.43	0.05	56.72
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

The air quality impact analysis of the MOB 1 scenario at Altus AFB is based on the net increase in emissions that would result from the beddown of 36 KC-46A aircraft. To produce a conservative analysis, it is assumed that all KC-46A aircraft associated with the MOB 1 scenario would become operational at Altus AFB in CY 2016.

Table 4-8 summarizes the annual emissions that would result from implementation of the MOB 1 scenario at Altus AFB. The data in Table 4-8 show that the increase in emissions from the addition of 36 KC-46A aircraft would not exceed 250 tons per year for VOCs, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, the MOB 1 scenario would produce less than significant impacts on these pollutant levels. However, these data also show that the increase in CO and NO<sub>x</sub> emissions from the MOB 1 scenario would exceed 250 tons per year. KC-46A aircraft operations and on-wing engine testing activities are the primary contributors to these emission increases.

**Table 4-8. Annual Operations Emissions Under the MOB 1 Scenario at Altus AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	50.07	201.73	837.56	45.42	2.92	2.49	125,647
On-Wing Aircraft Engine Testing – KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,286
Aerospace Ground Support Equipment – KC-46A	0.21	1.51	1.70	0.07	0.25	0.23	1,686
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	104,917
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	54,722
Transient Aircraft	1.38	5.07	3.15	0.31	0.77	0.77	530
On-Wing Aircraft Engine Testing – C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,633
On-Wing Aircraft Engine Testing – KC-135	0.99	14.32	7.07	0.82	0.05	0.05	2,071
Aerospace Ground Support Equipment – Existing Aircraft	0.59	4.27	4.83	0.19	0.71	0.65	4,741
Government-Owned Vehicles	0.10	1.01	2.19	0.01	0.12	0.10	657
Privately Owned Vehicles – On Base	0.16	8.90	1.12	0.03	0.10	0.05	1,531
Privately Owned Vehicles – Off Base	0.49	26.35	2.94	0.07	0.42	0.18	4,366
Nonroad Equipment	6.89	96.45	2.94	0.63	0.37	0.37	3,250
Mobile Fuel Transfer Operations	0.14	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	2.84	8.73	14.38	0.26	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
<b>Total Altus AFB Emissions – MOB 1 Scenario</b>	<b>108.19</b>	<b>815.32</b>	<b>1,938.34</b>	<b>155.06</b>	<b>266.59</b>	<b>264.88</b>	<b>312,037</b>
<b>Existing Altus AFB Emissions</b>	<b>55.39</b>	<b>573.25</b>	<b>1,069.38</b>	<b>106.96</b>	<b>262.74</b>	<b>261.86</b>	<b>191,769</b>
<b>Altus AFB MOB 1 Scenario Minus Existing Emissions</b>	<b>52.80</b>	<b>242.07</b>	<b>868.96</b>	<b>48.10</b>	<b>3.85</b>	<b>3.01</b>	<b>120,269</b>
<b>MOB 1 Scenario Net Emissions Increase Fraction of Existing Emissions</b>	<b>0.95</b>	<b>0.42</b>	<b>0.81</b>	<b>0.45</b>	<b>0.01</b>	<b>0.01</b>	<b>0.63</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

The CO and NO<sub>x</sub> emission increases that would result from the MOB 1 scenario would amount to 54 and 84 percent, respectively, of the total CO and NO<sub>x</sub> emissions generated from current operations at Altus AFB. The majority of proposed CO and NO<sub>x</sub> emissions generated by the MOB 1 scenario would result from KC-46A aircraft operations up to an altitude of 3,000 feet AGL and across the several square miles that make up the Altus AFB airspace and adjoining aircraft flight patterns. These emissions would be adequately dispersed through this volume of atmosphere to the point that they would result in no substantial ground-level impacts in a localized area. Jackson County generates relatively low levels of CO and NO<sub>x</sub> emissions (see Table 3-4) and is in attainment of all NAAQS by wide margins. Therefore, proposed CO and NO<sub>x</sub> emissions resulting from implementation of the MOB 1 scenario, in combination with existing emissions, would likely not be substantial enough to contribute to an exceedance of an ambient air quality standard. Therefore, operations resulting from the MOB 1 scenario at Altus AFB would produce less than significant air quality impacts.

Proposed operations under the FTU and MOB 1 scenarios at Altus AFB would emit HAPs that could potentially impact public health. Proposed KC-46A aircraft operations and on-wing engine testing activities would generate the majority of HAPs from these scenarios. As discussed above for proposed criteria pollutant impacts, since proposed KC-46A operations would occur intermittently over a volume of atmosphere, they would produce minimal ambient impacts of HAPs in a localized area.

Early in its planning, the USAF reconsidered its operational assumptions and projections to avoid or reduce potential impacts to the extent feasible. This resulted in the development of alternatives that reduced the emissions of criteria pollutants to the extent feasible by reducing the number of near-field operations, such as landing and take-off operations. At this time, the USAF is not aware of any other feasible mitigations that could be applied to further reduce the emissions impact from KC-46A aircraft operations and on-wing engine testing activities.

In addition to presenting estimates of GHG emissions that would result from implementation of the KC-46A scenarios at Altus AFB, the following considers how climate change may impact the KC-46A beddown scenarios at Altus AFB. For Altus AFB, the projected climate change impact of concern is increased aridity, as documented in *Global Climate Change Impacts in the United States* (USGCRP 2009). This report predicts that the Great Plains region surrounding Altus AFB will experience warmer temperatures and decreasing precipitation. These conditions will produce more frequent extreme events such as heat waves, droughts, scarcities of water supplies, and heavy rainfall. While operations at Altus AFB have already adapted to droughts, high temperatures, and scarce water supplies, exacerbation of these conditions in the future may increase the cost of proposed operations and could impede operations during extreme events. Additional measures could be needed to mitigate such impacts.

#### **4.1.3 Safety**

This section addresses the potential environmental consequences to flight and ground safety that could occur at or in the vicinity of Altus AFB with implementation of either the FTU or MOB 1 scenario. While the KC-46A is a new introduction to the USAF tanker fleet, this aircraft is based on the existing commercial Boeing 767 Jetliner, which has been in commercial service since 1982. As of November 2011, the B-767 has been in 16 mishaps worldwide. Note that, of these, 7 were not related to the aircraft or flight crew. The commercial accident rate of the B-767 is 0.36 per flight cycle (defined as per million takeoffs). As is the case with the KC-135 (also based upon a commercial airframe, the Boeing 707), it is expected that, over time, the accident rate of the KC-46A will be similar to that of the B-767. Note that historically

the accident rates for the military versions of the commercial airframes have been lower than those for the commercial airframes.

#### *4.1.3.1 FTU Scenario Safety Consequences*

##### *4.1.3.1.1 Flight Safety*

**Aircraft Mishaps** – The addition of up to eight KC-46A aircraft would result in an increase in airfield operations and accident potential over those generated by existing KC-135s and C-17s at Altus AFB. However, the KC-46A would operate within the airfield under similar procedures currently in use for the KC-135 mission. Current safety policies and procedures at the base ensure the lowest possible potential for aircraft mishaps. These safety policies and procedures would continue upon implementation of the FTU scenario.

As discussed previously, the accident rate for the KC-46A is expected to be similar to that of the commercial airframe upon which it is based. Using the accident rate of 0.36 per flight cycle, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low (less than one every 100 years; see Volume II, Appendix B, Section B.3.3.1).

Therefore, implementation of the KC-46A FTU scenario at Altus AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps.

**Bird/Wildlife-Aircraft Strike Hazard** – Altus AFB has an ongoing BASH program. To address bird/wildlife-aircraft strikes, the USAF has developed the Avian Hazard Advisory System to monitor bird activity and forecast bird strike risks. Using Next Generation Radar (NEXRAD) weather radars and models developed to predict bird movement, the Avian Hazard Advisory System is an online, near-real-time geographic information system (GIS) used for bird strike risk flight planning across the Continental United States (CONUS) and Alaska.

Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a tool for analysis and correlation of bird habitat, migration, and breeding characteristics with key environmental and manmade geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings, which take place prior to any sortie.

With KC-46A flight operations similar to those being conducted by KC-135 aircraft at Altus AFB, the overall potential for bird/wildlife-aircraft strikes is not anticipated to be significantly greater than current levels. All safety actions in place for existing KC-135 training would continue to be in place for the KC-46A aircraft. Altus AFB personnel have developed aggressive procedures designed to minimize the occurrence of bird/wildlife-aircraft strikes, and have documented detailed procedures to monitor and react to heightened risk of bird strikes (Altus AFB 2012a). When bird/wildlife-aircraft strike hazard risks increase, limits are placed on low-altitude flight and some types of training (e.g., multiple approaches, closed-pattern pattern work) in the airport and airspace environments. Special briefings are provided to pilots whenever the potential for bird strikes is high within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.

##### *4.1.3.1.2 Ground Safety*

There are no aspects of the FTU aircraft basing scenario at Altus AFB that are expected to create new or unique ground safety issues not already addressed by current policies and procedures.

Operations and maintenance procedures, as they relate to ground safety, are conducted by base personnel and would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and Air Force Occupational and Environmental Safety, Fire Protection, and Health (AFOSH) standards.

No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A FTU scenario at Altus AFB. All renovation and construction activities would comply with all applicable U.S. Occupational Health and Safety Administration (OSHA) regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable AFOSH and OSHA requirements are implemented.

The KC-46A would be operated in an airfield environment similar to the current operational environment. Since the KC-46A is a new airframe and would require response actions specific to the aircraft, the emergency and mishap response plans would be updated to include procedures and response actions necessary to address a mishap involving the KC-46A and associated equipment. With this update, the Altus AFB airfield safety conditions would be similar to baseline conditions. Therefore, no significant impact would occur from aircraft mishaps or mishap response.

Capability for fire response is located on base and in nearby communities. The base Fire Department is party to mutual-aid support agreements with the nearby communities. These functions would continue to occur as they have under current conditions. The increase in aircraft operations would increase the risk of mishaps in training areas, including over the clear zones (CZs) and accident potential zones (APZs). See Volume II, Appendix B, Figure B-1, for the typical generic CZ and APZ dimensions. However, the base prioritizes compatible land use planning with surrounding jurisdictions to manage future incompatible development.

#### *4.1.3.2 MOB 1 Scenario Safety Consequences*

The primary difference between the KC-46A FTU and the MOB 1 scenario at Altus AFB would be the additional 28 KC-46A aircraft and the additional airfield operations associated with the MOB 1 scenario. As previously described for the FTU scenario, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low. Therefore, implementation of the KC-46A MOB 1 scenario at Altus AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps.

### **4.1.4 Soils and Water**

#### *4.1.4.1 FTU Scenario Soils and Water Consequences*

All of the construction and demolition (C&D) activities associated with the proposed KC-46A FTU scenario would occur within the Altus AFB boundary. With the exception of a portion of the new Flight Training Center, much of this work would occur on previously disturbed areas. As shown in Table 2-3, the total potential disturbed area for the projects associated with the FTU scenario would not exceed 5 acres (new construction and additions/alterations).

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

The Altus AFB Storm Water Pollution Prevention Plan (SWPPP) for industrial facilities identifies control practices that would be followed for spill prevention and response, routine inspection of discharges at sites, and proper training of employees. The SWPPP would be updated to reflect the soil disturbance activities associated with the FTU scenario.

Based on the location of the proposed activities, as depicted on Figure 2-4, no sensitive groundwater resources, surface water resources, or floodplains are potentially impacted within the areas of the base proposed for the FTU beddown.

#### *4.1.4.2 MOB 1 Scenario Soils and Water Consequences*

With the exception of the proposed new ramp area, the refueling truck parking yard, and hangar row road, the development would occur on previously disturbed areas within the Altus AFB boundary. The total disturbed area for the projects proposed as part of the KC-46A MOB 1 scenario would not exceed 80 acres (the area for new construction and additions/alterations). Design and construction methods, such as appropriate stormwater system controls, would be incorporated into the construction contract to reduce the potential for significant run-off impacts.

A tributary to the Ozark Irrigation Canal and a surface water drainage currently flow under the runway. Flow in these canals is intermittent and these are generally dry except when in use during the irrigation season. Portions of the tributary to the Ozark Canal would be contained in a concrete box culvert under the proposed parking ramp. Structures within the canal were evaluated for potential historical significance. No potential historic structures were identified. This canal is owned by the Bureau of Reclamation, and the stamped engineering plans and specifications for this project would require Bureau of Reclamation approval. This canal is protected from surface water flow by earthen levees, and site-specific standard construction practices would be utilized to protect the integrity of any water running through this canal.

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

As referenced above, the Altus AFB SWPPP would be updated to describe the work to be completed as part of both scenarios and the activities that would be necessary to prevent soil erosion and sedimentation from the large amount of acreage proposed for development.

Based on the location of the proposed activities, as depicted on Figures 2-6 and 2-7, no sensitive groundwater resources or floodplains would be impacted within the project areas of the MOB 1 scenario.

### **4.1.5 Biological Resources**

#### *4.1.5.1 FTU Scenario Biological Resources Consequences*

##### *4.1.5.1.1 Vegetation*

Potential impacts on vegetation resulting from implementation of the FTU scenario at Altus AFB are anticipated to be minor and short term because the majority of the demolition, construction, and renovation is planned to occur on previously disturbed areas. These projects would only affect small areas of improved and semi-improved land. Since these areas are already highly disturbed from ongoing routine maintenance and/or landscaping activities and are of low ecological value, there would be no significant impacts on vegetation resulting from FTU beddown.

#### 4.1.5.1.2 Wildlife

Potential impacts on wildlife can be categorized as noise and habitat loss/alteration due to infrastructure changes, noise and visual disturbance associated with increased airfield and aircraft operations, and increased potential for bird/wildlife-aircraft strikes.

The areas proposed for development as a result of implementing the FTU scenario provide little wildlife habitat, and the projects would result in no significant impacts on wildlife populations.

Machinery associated with facility construction, renovation, and demolition would produce noise that would be perceived by wildlife near the activities (see Section 4.1.1, Noise). However, this noise would be localized, during daylight hours only, and short term. Wildlife in the area is already exposed to human-produced noise under baseline conditions. Therefore, construction-related noise would have a negligible impact on wildlife populations.

Airfield operations are anticipated to increase at Altus AFB. Noise impacts resulting from the increase in operations are anticipated to be minimal. The noise contours would increase only marginally and would not substantially increase the amount of land exposed to additional noise.

Increased operations would increase the potential for aircraft to strike birds (including migratory species) and other wildlife. The Altus AFB BASH Plan (Altus AFB 2012a) establishes procedures and actions to minimize the potential for aircraft to strike birds and other wildlife. Significant wildlife impacts are not anticipated to result from implementation of the KC-46A FTU scenario at Altus AFB.

#### 4.1.5.1.3 Special-Status Species

Because no special-status species and/or designated critical habitat occur at Altus AFB, no significant impacts on special-status species are anticipated to result from the FTU scenario at Altus AFB.

#### 4.1.5.1.4 Wetlands

Because there are no wetlands known to exist in any of the areas proposed for development under the KC-46A FTU scenario, implementation of this scenario at Altus AFB is not anticipated to directly affect any wetlands.

### 4.1.5.2 *MOB 1 Scenario Biological Resources Consequences*

#### 4.1.5.2.1 Vegetation

The MOB 1 scenario at Altus AFB would have similar potential impacts on vegetation as described for the FTU scenario. The main difference between the MOB 1 and FTU scenario would be the loss of additional acres of semi-improved, open-space land. This development would be associated with construction of a new ramp and apron, hangars, and other associated facilities necessary to accommodate 36 additional KC-46A aircraft. The area is located west of Taxiway Charlie and is currently within the CZ of the airfield (see Figure 2-6). This area has low ecological quality because it is regularly mowed and treated to maintain vegetation as required by the Altus AFB BASH Plan (Altus AFB 2012a). Many of the construction, renovation, and demolition projects that are proposed as part of the MOB 1 scenario are currently located within developed or disturbed areas that provide little habitat value and would result in no significant impacts on vegetation.

#### 4.1.5.2.2 Wildlife

Potential impacts on wildlife would be similar to those described in the FTU analysis and include minor noise increases and land disturbance due to infrastructure changes, the potential for visual disturbance associated with increased airfield and aircraft operations, and increased potential for bird/wildlife-aircraft strikes.

Many of the projects proposed as part of the MOB 1 scenario would occur in currently developed or disturbed areas that provide little wildlife habitat and would result in no significant impacts on wildlife populations. Some projects would occur in regularly maintained vegetated areas. In particular, construction of the new parking ramp and apron and associated facilities would encompass a large area of semi-developed airfield land.

Vegetated portions consist of maintained grasslands. These parcels are somewhat fragmented and are located near developed portions of the base with ongoing human activity. A variety of small wildlife probably use the vegetated areas periodically, and it is possible that larger species such as deer and coyote occasionally move through these areas. New construction for the fuel tanks, pumps, and hydrant system would occur adjacent to the golf course irrigation pond that may provide benefit to birds, mammals, and other wildlife when water is available.

Noise produced during construction, renovation, and demolition activities would be perceived by wildlife near the activities. However, this noise would be localized, during daylight hours only, and short term. Wildlife in the area are already exposed to frequent noise, and the activities would generally be restricted to daytime working hours. Therefore, construction-related noise would have a negligible impact on wildlife populations.

Airfield operations would increase over baseline conditions. Because the KC-46A is quieter than the KC-135, only minor noise increases would be anticipated. The noise contours would increase only marginally on and near the base and would not substantially increase the amount of land exposed to additional noise.

Similar to the analysis of the FTU beddown, increased operations would increase the potential for aircraft to strike birds and other wildlife in the air and on the runway. However, the Altus AFB BASH Plan establishes procedures and actions to minimize the potential for wildlife strikes. With continued adherence to the plan, there would be no significant impacts on wildlife populations due to aircraft strikes.

Overall effects on wildlife would be similar to those described for the FTU beddown. Significant wildlife impacts are not anticipated to result from implementation of the KC-46A MOB 1 scenario at Altus AFB.

#### 4.1.5.2.3 Special-Status Species

Because no special-status species and/or designated critical habitat occur at Altus AFB, no significant impacts on special-status species are anticipated to result from the MOB 1 scenario at Altus AFB.

#### 4.1.5.2.4 Wetlands

Because there are no known wetlands in any of the areas proposed for development under the KC-46A MOB 1 scenario, implementation of this scenario at Altus AFB is not anticipated to directly affect any wetlands.

#### **4.1.6 Cultural Resources**

##### *4.1.6.1 FTU Scenario Cultural Resources Consequences*

Actions associated with the proposed KC-46A FTU scenario include demolition of two buildings, renovation of two buildings, and additions and/or alterations to four buildings at Altus AFB. Building 285, a hangar, has been determined eligible for listing on the National Register of Historic Places (NRHP) by Altus AFB (97 AMW 2013). Oklahoma SHPO has concurred with the USAF's determination that modifications proposed for Building 285 as part of the KC-46A undertaking will not adversely affect the building's NRHP eligibility (letter from SHPO to USAF dated 29 July 2013), concluding the Section 106 consultation process.

No adverse impacts on archaeological historic properties are anticipated to result from implementing the FTU scenario. Ground-disturbing activities would occur on previously disturbed grounds. Those areas not already beneath previously modified surfaces have been surveyed for the presence of archaeological resources, and no historic properties have been located. It is unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, or addition. It is still possible that archaeological resources could be buried on Altus AFB. In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the National Historic Preservation Act (NHPA) and follow the standard operating procedures outlined in the Integrated Cultural Resource Management Plan (ICRMP) (Altus AFB 2009d). None of the other buildings associated with implementing the FTU scenario are considered eligible for the NRHP.

Indirect effects on cultural resources from population increase or visual intrusions are extremely unlikely. Under the FTU scenario, the population would increase by a small amount relative to the existing population at the base and in Altus. New construction would occur in the context of an active AFB, where changes in the infrastructure are common. There is no historic district, nor would the viewshed of the single historic property be affected by the proposed construction.

No modifications to buildings or ground-disturbing activities are anticipated at the auxiliary airfields. The noise environment would remain similar to baseline conditions. There would be no effect on historic properties at AMA, CSM, AFW, or LBB.

No adverse Section 106 impacts to tribal resources are anticipated. Consultation was initiated with 10 tribes. Eight tribes responded with no objections to the USAF's finding of no adverse impact. Additional efforts were made to contact the remaining two non-responsive tribes without success (see Table A-1 in Volume II, Appendix A, Section A.3). While the USAF values its relationship with all tribes and will continue to consult on other planning efforts or matters of known or potential interest to tribes, Section 106 consultation on the KC-46A FTU beddown proposed alternative at Altus AFB is now complete.

##### *4.1.6.2 MOB 1 Scenario Cultural Resources Consequences*

Implementing the MOB 1 scenario at Altus AFB would require demolition of eight buildings and a paved ramp area, renovation of three buildings and two paved areas, and additions/alterations of two buildings. Building 285, a hangar, is the only building identified as eligible for the NRHP, and it is proposed to be renovated as part of the MOB 1 scenario. Modifications proposed for Building 285 will not adversely affect the building's NRHP eligibility. The Oklahoma SHPO has concurred with the USAF's Finding of No Adverse Effect on historic properties (SHPO letter to USAF dated 29 July 2013; Volume II, Appendix A, Section A.5.1), concluding the Section 106 consultation process.

No impacts on archaeological historic properties are anticipated to result from implementing the MOB 1 scenario. Ground-disturbing activities would occur in previously disturbed contexts. Those areas not already beneath previously modified surfaces have been surveyed for the presence of archaeological resources, and no historic properties have been located. It is extremely unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, or addition or new construction. It is still possible that archaeological resources could be buried on Altus AFB. In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the NHPA and the standard operating procedures outlined in the ICRMP (Altus AFB 2009d).

Indirect effects on cultural resources from population increase or visual intrusions are extremely unlikely. Although the population at Altus AFB would double under the MOB 1 scenario, the resulting total should not affect historic properties. New construction would occur in the context of an active Air Force Base, where changes in the infrastructure are common. There is no historic district, nor would the viewshed of the single historic property be affected by the proposed construction.

Altus AFB consulted with the same tribes as described in the FTU scenario. No adverse Section 106 impacts to tribal resources are anticipated. Tribal responses for the MOB 1 scenario were the same as those described for the FTU scenario. Section 106 consultation on the KC-46A MOB 1 beddown proposed alternative at Altus AFB is now complete.

#### **4.1.7 Land Use**

##### *4.1.7.1 FTU Scenario Land Use*

###### *4.1.7.1.1 Physical Development*

The C&D projects proposed for the FTU scenario would occur in the developed areas of the base, predominantly near the airfield, industrial, and administrative portions of the base. The sites selected for the proposed projects either provide for requisite functional relationships or replace or augment existing base infrastructure. The proposed construction, demolition, and renovation generally align with the desired layout and organization of land use described in the base's 2003 General Plan.

Physical development on the base could result in short-term effects from construction activity on existing land use and activities. These typically include noise, dust, and traffic. The base would require contractors to use standard construction practices that would reduce construction-related effects, especially around housing and community areas, schools, and day care facilities. For example, these could include measures to control the hours for operating equipment, use of properly maintained equipment and sound-muffling fixtures, proper siting of equipment operating and staging areas (away from sensitive locations), selection of truck and delivery routes, and speed limits for construction and worker vehicles.

Implementation of the FTU scenario at Altus AFB would potentially require 144 housing units. Vacant housing on base can only fulfill a small portion of this demand. The demand could be met by vacant housing in the community or it could stimulate renovation or new development on base or in the community. Suitable land (about 60 acres) is available for new housing on the base on the edge of the existing housing area. Future development in the community would require approval from local jurisdictions (either the City of Altus or Jackson County). Approval of such development near Altus AFB would be based on conformance of the proposal with zoning and specific airfield compatibility requirements. Both the City of Altus and Jackson County have

cooperated with Altus AFB to control land use surrounding the base. Per the City's Unified Development Code, development proposals are evaluated relative to noise compatibility, accident potential (safety), and height of structures (that could obstruct air navigation) within 3 miles of the city limits. In addition, the Joint Land Use Study (JLUS) limits density in areas exposed to noise levels of 65 dB DNL and higher and recommends sound attenuation construction for new buildings in these areas. Existing land use controls have been successful in maintaining compatible land uses and limiting encroachment and development near the base.

The physical changes and daily activities on the ground would be confined to the base, thus the proposed on-base development would have minimal impact on off-base areas. Increased traffic through the Main Gate would use Falcon Road. There is little interface between the traffic on Falcon Road and adjacent land use. A cemetery, agricultural fields, and intermittent commercial uses near Falcon Road could experience some increase in noise and traffic at peak hours, but this would not change the suitability of these areas for the current uses. Traffic could also increase along East Tamarack Road and through residential areas along this road. The roadway design would accommodate traffic adequately, and the added traffic is not anticipated to conflict with these neighborhoods.

#### 4.1.7.1.2 Aircraft Operations

This analysis includes an evaluation of the effect of proposed aircraft noise on land uses and any compatibility issues both on and off base. The USAF has participated in the Federal Interagency Committee on Urban Noise development of guidelines on noise levels and land use compatibility in the vicinity of airfields. Volume II, Appendix C, Section C.1.3.2, presents the noise compatibility guidelines for noise exposure and various land uses, along with recommended noise abatement measures to reduce incompatible exposure levels.

The total geographic area exposed to noise greater than or equal to 65 dB DNL resulting from FTU aircraft operations at Altus AFB is shown on Figure 4-1. Moderate noise increases on the base (reported in Table 4-2) would have a negligible impact on areas used for mission-related uses and support services. Neither of the two day care facilities nor the elementary school would experience adverse increases in noise exposure (remaining outside the 65 dB DNL contour). None of the family housing areas would experience incompatible noise levels above 65 dB DNL. The noise increase would primarily result from flightline aircraft maintenance activities performed near Building 285 and the number of aircraft operations proposed under the FTU scenario at night, with aircraft returning to the base after 10:00 P.M. at the end of their training sortie. This would be a minor impact on the base residential area.

The expected changes in noise exposure to off-base land uses are minimal. The proposed change in aircraft operations would result in exposure of about 580 additional acres to noise levels equal to or greater than 65 dB DNL outside the base, representing an increase of about 11 percent of affected off-base land. Most of this land is agricultural, with some existing homes (see Section 3.1.7.2). It is possible that a few homes would experience a shift in noise exposure level from just below 65 dB DNL to just above, or just below 70 dB DNL to just above 70 dB DNL. However, for most locations on the ground, increases would be less than 1 dB DNL (see Section 4.1.1.1) and imperceptible to underlying residents compared to current conditions. The increase would not cause new land use conflicts or compatibility concerns. A minor adverse impact on existing residential land use east of the City of Altus is a result of 17 additional persons being affected by the 65 dB DNL or greater noise contour.

#### 4.1.7.1.3 Aircraft Operations – Auxiliary Airfields

KC-46A aircrews associated with the FTU scenario would use four different auxiliary airfields. However, because these airfields would only be used to practice aircraft operations with no associated ground level development and the noise resulting from aircraft operations noise at three of the four would be less than 0.5 dB, only Clinton-Sherman Air Industrial Park (CSM) has been included in this evaluation. Projected levels of use could increase the area exposed to noise levels of 65 dB DNL or greater by about 5 acres at CSM. The area surrounding CSM is used for agriculture. Compared to the 1,607 acres currently exposed to noise levels from other aircraft, this increase would be inconsequential and imperceptible. No change in noise exposure for areas within the CSM boundary is projected. Overall, no significant impacts on land use at CSM are anticipated to result from aircraft operations associated with the FTU scenario at Altus AFB.

#### 4.1.7.2 *MOB 1 Scenario Land Use*

##### 4.1.7.2.1 Physical Development

The impacts on land use resulting from physical development associated with implementation of the MOB 1 scenario at Altus AFB are similar to those associated with the FTU scenario, as described in Section 4.1.7.1. However, implementation of the MOB 1 scenario would potentially require approximately 1,870 housing units. Housing on base, in the local community, and outside of Jackson County would be required to meet this demand. As described in Section 4.1.7.1.1, new private residential development would require approval from local jurisdictions.

Potential indirect effects from construction on land uses near the base are similar to those described in Section 4.1.7.1.1. The projected increase in base population would increase the number of persons driving in and out of the base each day. Increased traffic on local access roads could cause minor indirect impacts on adjacent land uses due to congestion and localized noise increases during peak commute hours. Longer wait times to access driveways or side roads may cause intermittent inconvenience but would not change the current uses. Additional traffic on major streets could benefit commercial use.

##### 4.1.7.2.2 Aircraft Operations

Impacts on land use resulting from the airfield operations associated with the MOB 1 scenario at Altus AFB would be similar to those described for the FTU scenario in Section 4.1.7.1.2. Aircrews associated with the MOB 1 scenario would fly more operations than FTU aircrews, but fewer would be conducted at night (10 percent). The increase in operations would result in approximately 155 additional off-base acres exposed to noise levels equal to or greater than 65 dB DNL compared with baseline conditions and 429 fewer off-base acres compared with the FTU scenario at Altus AFB (see Table 4-2). None of the on-base housing area is expected to be exposed to incompatible noise levels resulting from the proposed MOB 1 aircraft operations.

Noise projected to emanate off Altus AFB from aircraft operations associated with the MOB 1 scenario is expected to be similar to the off-base noise associated with the FTU scenario, with similar minor impacts on a few surrounding residences located in agricultural areas and areas east of the City of Altus (see Section 4.1.7.1.2). Aircrews operating KC-46A aircraft would proportionally increase use of the east and west pattern routes. Residents underlying these flight tracks would likely notice the increase in frequency of overflights, although the sound level for the KC-46A would be lower than the KC-135. Disturbance from overflights may annoy some residents (see Section 3.1.7.2), but would not cause conditions that make affected areas unsuitable for residential use based on average noise levels and recommended compatibility guidelines.

#### **4.1.8 Infrastructure**

Refer to Section 3.1.8 for a description of existing infrastructure system capacities and conditions at Altus AFB. Table 2-4 provides changes in population due to implementation of the FTU scenario and Table 2-7 indicates changes in population due to implementation of the MOB 1 scenario at Altus AFB. These changes in population and proposed development were used to determine potential impacts on infrastructure. For each scenario, the maximum demand or impact on capacity was calculated for the potable water, wastewater, electric and natural gas systems based on the change in population. To identify maximum demand or impact on these systems, any change in population was assumed to live on base. For the assessment of the transportation infrastructure, any change in population was assumed to reside off base.

##### *4.1.8.1 FTU Scenario Infrastructure Consequences*

###### **4.1.8.1.1 Potable Water System**

The City of Altus and Jackson County averaged 91 gallons per day (GPD) of per capita water demand in 2012 (OWRB 2013). Using that amount as a planning factor, the change in population associated with the FTU scenario would create an additional water use demand of 0.08 million gallons per day (MGD). Implementing the FTU scenario would increase average daily demand from 30 to 37 percent and peak use from 51 to 59 percent.

###### **4.1.8.1.2 Wastewater**

The USEPA estimates that the average person generates approximately 100 GPD of wastewater between showering, toilet use, and general water use (USEPA 2013c). Using this amount as a planning factor along with the change in population, the FTU scenario would increase wastewater discharge from Altus AFB by 0.09 MGD. This would increase average daily discharge from 4 to 6 percent of the city's Wastewater Treatment Plant (WWTP) capacity and would increase peak discharge from 6 to 8 percent of the city's WWTP capacity. This increase in additional wastewater discharge for average or peak use for the FTU scenario would be within the supply and capacity of the City of Altus WWTP. As noted in Section 3.1.8.2, portions of the on-base wastewater collection and distribution system have been improved over the last 10 years.

###### **4.1.8.1.3 Stormwater System**

The FTU scenario would require demolition of facilities and construction of new facilities. This would take place within the existing developed base flightline and cantonment areas. Table 2-3 identifies the projects associated with the FTU scenario; the total potential disturbed area associated with these projects would not exceed 5 acres (new construction and additions/alterations). All other construction associated with the FTU scenario would occur on improved areas. With the exception of flood-prone areas in the northeast and southwest corners of the base, the stormwater system is reported to perform adequately. The FTU scenario would not require the construction of new facilities in either of the flood-prone areas. Implementation of the FTU scenario would not significantly increase stormwater run-off from the base.

During the short-term construction period for the FTU scenario, all contractors would be required to comply with applicable statutes, standards, regulations, and procedures regarding stormwater management. During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures.

The existing Altus AFB SWPPP and National Pollutant Discharge Elimination System (NPDES) Stormwater Multi-Sector General Permit for Industrial Activities would be updated to include measures to avoid and minimize the potential impacts that could occur during the short-term construction phase of proposed new and renovated facilities or during operations under the FTU scenario. In addition, the requirements of the Energy Independence and Security Act (EISA) of 2007 would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

#### 4.1.8.1.4 Electrical System

To estimate the change in residential electrical use associated with personnel and their dependents, data from the U.S. Energy Information Administration (USEIA) were used to identify that residential consumers averaged about 14.66 megawatt hours (MWH) per person per year (1,667,223 users) in Oklahoma in 2011 (the best available statistics), with a total of about 24,425,027 MWH consumed in 2011 (USEIA 2011). Using that amount as a planning factor along with the change in population, the FTU scenario would increase state annual residential demand for electricity by 12,791 MWH per year. This represents less than 1 percent of the annual state-wide usage in 2011. Assuming the change in population resides on Altus AFB and the population uses electricity at the 2011 residential average rate of 0.041 MWH per person per day, the FTU scenario would increase daily use of electricity by 35.04 MWH per day. The FTU scenario would increase average daily demand from 12 to 16 percent of base system capacity and would increase peak demand from 15 to 18 percent of base system capacity.

#### 4.1.8.1.5 Natural Gas System

To estimate the additional residential natural gas use associated with personnel and their dependents, data from the USEIA were used to identify that residential consumers averaged about 0.07 million cubic feet (MMcf) per person per year (922,240 users) in Oklahoma in 2011, with a total of about 61,387 MMcf consumed (USEIA 2011). Using that amount as a planning factor along with the change in population, the FTU scenario would increase state annual residential demand for natural gas by 58.1 MMcf per year. This represents less than 1 percent of the total state-wide usage in 2011. Assuming the change in population reside on Altus AFB and the population uses electricity at the 2011 residential average rate of 0.19 thousand cubic feet (Mcf) per person per day, the FTU scenario would increase the daily use of natural gas by 160 Mcf per day. The FTU scenario would result in an increase of average daily natural gas use from 9 to 14 percent of base system capacity and an increase of peak use from 23 to 28 percent of base system capacity.

#### 4.1.8.1.6 Solid Waste Management

Solid waste generated from the proposed demolition activities would consist of building materials such as large pieces of concrete, metals (e.g., conduit, piping, and wiring), lumber, and other nonhazardous debris. These activities would lead to a requirement for C&D debris to be recycled or taken to the City of Altus Landfill or other landfills in the region.

Using methodology developed by the USEPA (USEPA 2009b) to determine the amount of C&D debris, it is estimated that implementation of the FTU scenario would result in approximately 3,228 tons of C&D debris. Disposal of the debris would be through an integrated C&D debris diversion approach or removal to landfills. The integrated C&D debris diversion approach includes reuse, recycling, volume reduction/energy recovery, and similar diversion actions. The

DoD has set a target C&D debris diversion rate of 60 percent by Fiscal Year 2015 (DoD 2012). Applying this target diversion rate, approximately 1,937 tons of C&D debris would be diverted for reuse or recycling and approximately 1,292 tons would be placed in the City of Altus Landfill or other landfills in the region.

This would be a potentially short-term, minor, adverse impact that the landfill could absorb, as the City of Altus Landfill accepts an average of 36,100 tons of waste annually, including C&D waste. The overall capacity of the landfill is 2 million tons.

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, asbestos-containing material (ACM), lead-based paint (LBP), or other hazardous components, would be managed in accordance with Air Force Instruction (AFI) 32-7042, "Waste Management."

#### *4.1.8.2 FTU Scenario Transportation Consequences*

Implementation of any of the facilities and infrastructure projects associated with the FTU scenario at Altus AFB would require the delivery of materials to and removal of construction-related debris from demolition, renovation, and new construction sites. Trucks associated with these activities, along with construction crews, would either access the base via the Main Gate or the South Gate. Construction-related traffic would comprise only a small portion of the total existing traffic volume in the area and at the base. Increased traffic associated with these activities could contribute to increased congestion at the entry gates, delays in the processing of access passes, and degradation of the affected road surfaces.

Additionally, intermittent traffic delays and temporary road closures could result in the immediate vicinity of the facility and infrastructure project sites. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time and by using the South Gate instead of the Main Gate. Also, many of the heavy construction vehicles would be driven to the site and kept on base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities have ceased. As a result, no long-term or significant impacts on transportation infrastructure are anticipated.

Implementation of the KC-46A FTU scenario at Altus AFB would result in an increase in on-base mission personnel, which would equate to about a 12 percent increase in daily commuting traffic to and from the base. In addition to the increase in personnel, there would also be a small increase in dependent and commercial traffic. This assumes that all personnel and dependents live off base, work standard workdays, and drive individually to the base. For the purposes of this analysis, it was assumed that the additional students associated with the KC-46A FTU scenario would be housed on base and would not have an impact on daily traffic. The small increase in base mission personnel could increase congestion and queuing at the Main Gate during morning and evening rush hours. To minimize this, the base could adjust the schedule of operations to accommodate this increase, upgrade the Main Gate (e.g., provide additional lanes) and/or provide additional personnel at the gate to process security checks during the peak hours. Regional access roads and the on-base road network have adequate capacity to absorb the small amount of additional traffic without major impacts on traffic flow, circulation, or level of service.

#### *4.1.8.3 MOB 1 Scenario Infrastructure Consequences*

##### *4.1.8.3.1 Potable Water System*

Based on the water demand planning factor for the City of Altus and Jackson County in Section 4.1.8.1.1 and the change in population associated with the MOB 1 scenario, there would be an additional water demand of 0.54 MGD. The MOB 1 scenario would increase average daily demand from 30 to 82 percent and peak use demand from 51 to 103 percent. The MOB 1 scenario would require the system to operate at over full contracted capacity during peak use months, when base water pressure is at its lowest point. This evaluation is based on the contract amount with City of Altus, at 1.03 MGD. The Altus AFB water system has the capacity to accommodate 2 MGD.

##### *4.1.8.3.2 Wastewater*

Implementation of the MOB 1 scenario would increase wastewater discharge to 0.59 MGD based on the USEPA wastewater planning factor in Section 4.1.8.2.2 and the change in population. The MOB 1 scenario would increase average daily discharge from 4 to 19 percent and the highest reported peak discharge from 6 to 21 percent. This increase in additional wastewater discharge for average or peak use for the MOB 1 scenario would be within the capacity of the City of Altus WWTP.

As noted in Section 3.1.8.2, portions of the on-base wastewater collection system have been improved in the last 10 years.

##### *4.1.8.3.3 Stormwater System*

Implementation of the MOB 1 scenario would not require construction in either of the flood-prone areas. The facilities proposed for renovation are also not located in these areas.

Table 2-6 lists the projects associated with the MOB 1 scenario; the total potential disturbed area associated with these projects would not exceed 80 acres (new construction and additions/alterations). The largest area of disturbance would be associated with the new aircraft parking, taxiway, and ramp space areas proposed for undeveloped land within the existing flightline area.

During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures. An SWPPP update would be required and the requirements of the EISA would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

During the short-term construction period for the MOB 1 scenario, the contractor would be required to comply with the new SWPPP, applicable statutes, standards, regulations, and procedures regarding stormwater management during construction.

##### *4.1.8.3.4 Electrical System*

Using the USEIA planning factor in Section 4.1.8.1.4 and the change in population, implementation of the MOB 1 scenario would increase the state annual residential demand for electricity by 86,383 MWH per year. This represents less than 1 percent of the state-wide usage in 2011. Assuming the change in population resides on Altus AFB and the population uses

electricity at the 2011 residential average rate of 0.041 MWH per person per day, implementation of the MOB 1 scenario would increase the average daily use of electricity by 236.65 MWH per day. The MOB 1 scenario would increase average daily demand from 12 to 35 percent of base system capacity and would increase peak demand from 15 to 37 percent of base system capacity.

#### 4.1.8.3.5 Natural Gas System

Using the USEIA planning factor in Section 4.1.8.1.5 and the change in population, implementation of the MOB 1 scenario would increase state annual residential demand for natural gas by 393 MMcf per year. This represents less than 1 percent of the total state-wide usage in 2011. Assuming the change in population resides on Altus AFB and the population uses natural gas at the 2011 residential average rate of 0.19 Mcf per person per day, implementation of the MOB 1 scenario would increase daily natural gas use by 1,076 Mcf. The MOB 1 scenario would increase average daily natural gas demand from 9 to 43 percent of base capacity and would increase peak demand from 23 to 57 percent of base capacity.

#### 4.1.8.3.6 Solid Waste Management

Implementation of the MOB 1 scenario would be anticipated to generate approximately 49,028 tons of C&D debris for recycling or removal to landfills. Application of the 60 percent DoD diversion target rate for C&D debris would result in approximately 29,417 tons being reused or recycled and approximately 19,611 tons being placed in the City of Altus Landfill or other landfills in the region.

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, ACM, LBP, or other hazardous components, would be managed in accordance with AFI 32-7042, "Waste Management."

#### 4.1.8.3.7 Transportation

Because the demolition, renovation, and construction projects would require more total square footage than the projects associated with the FTU scenario, the number of construction-related truck trips and number of construction workers, along with duration of the time to complete the projects, would be greater.

Implementation of the KC-46A MOB 1 scenario at Altus AFB would result in an approximate increase of 54 percent in daily commuting traffic to and from the base. In addition to the increase in personnel, there would also be an increase in dependent and commercial traffic. This assumes that all personnel and dependents live off base, work standard workdays, and drive individually to the base. This increase in base mission personnel is likely to increase congestion and queuing at the Main Gate during morning and evening rush hours.

On-base road network congestion would also increase, affecting traffic circulation; however, no significant impacts are expected. To minimize the potential for adverse impacts, the base could adjust the schedule of operations to accommodate this increase, upgrade the Main Gate (e.g., provide additional lanes), and/or provide additional personnel at the gate to process security checks during the peak hours. It is expected that the affected regional access roads have additional capacity to absorb additional traffic without a major impact on the level of service or flow of traffic.

## **4.1.9 Hazardous Materials and Waste**

### **4.1.9.1 FTU Scenario Hazardous Materials**

The USAF has developed a Hazardous Materials Management Plan (HMMP) for the KC-46A program. This plan details the strategy for integrating hazardous materials management into the KC-46A system. The USAF will actively pursue efforts to minimize or eliminate the use of various materials, including hexavalent chromium, cadmium, and halon. The KC-46A will be the first aircraft in the Air Mobility Command (AMC) inventory to be completely free of ozone depleting substances (ODS), including from handheld fire extinguishers. The corrosion protection program for the KC-135 uses hexavalent chromium on both the interior and exterior. After the first 11 aircraft, the KC-46A corrosion control program will only use hexavalent chromium on the interior of the aircraft. Specific cadmium plating alternatives are currently being implemented for use on KC-46A aircraft. These include zinc-nickel plating in lieu of cadmium for plating on bearings and bushings when required. Standard materials such as cleaning solvents, sealants, adhesives, and paints may be required for routine maintenance and repairs. The preference will be to use the least hazardous material when alternates are available.

Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through Hazardous Materials Pharmacy (HAZMART) are adequate to handle the changes anticipated with the addition of eight KC-46A aircraft for the FTU scenario, but would be expanded to meet the increased use.

#### **4.1.9.1.1 Aboveground and Underground Storage Tanks**

The addition of KC-46A aircraft at Altus AFB would increase the maximum daily consumption of JP-8. The increase in fuel consumption would be supported by the current infrastructure at the base. Some of the new and remodeled facilities would require the addition of new aboveground storage tanks (ASTs), underground storage tanks (USTs), and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to oil-water separators (OWSs), if required, to contain releases of petroleum products. The Altus AFB Integrated Contingency Plan (Altus AFB 2012c) would subsequently need to be amended to capture any changes in facility design, construction operation, or maintenance that materially affect the potential for a discharge.

#### **4.1.9.1.2 Toxic Substances**

Demolition, renovation, and addition/alteration projects are planned as part of the Altus AFB FTU scenario. All but one of the buildings (Building 518) that would be affected by these projects has had ACMs positively identified inside. Volume II, Appendix E, Table E-1, contains a list of buildings proposed for modification under the FTU scenario and their potential to contain ACMs.

Prior to initiating the projects, all ACMs would be identified through sampling and analysis of building materials for asbestos. Exposed friable asbestos would be removed in accordance with applicable Federal, state, local, and USAF rules and regulations. Before initiating the ACM removal work, agency notifications would be completed. No work on an ACM project would be conducted unless it is performed by persons with current certificates of training in accordance with standards established by OSHA and the USEPA. All ACM wastes would be disposed of at a waste disposal site authorized to accept such waste. Additionally, the handling and disposal of ACM wastes would be performed in accordance with the Altus AFB Asbestos Management and Operations Plan (Altus AFB 2010c) and in compliance with Federal, state, and local regulations. Transport and disposal documentation records, including signed manifests, would also be required.

LBP survey data were not obtained for any of the buildings that would be demolished, renovated, or altered (or are included as options) as part of the proposed action. Based on their years of construction, a few buildings that are proposed or are options for renovation, alteration, or demolition have the potential for containing LBP. Volume II, Appendix E, Table E-1, contains a list of buildings proposed for modification under the FTU scenario and their potential to contain LBP. According to standard operating procedures, LBP surveys are conducted prior to any renovation or demolition activities. Demolition of structures known to contain LBP would be conducted in accordance with applicable regulations. Proper disposal of any resulting lead-containing wastes would also be conducted in accordance with Federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at an approved off-base disposal facility.

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A FTU scenario at Altus AFB, and long-term benefits from removal of toxic substances are anticipated.

#### *4.1.9.2 Hazardous Waste Management*

Altus AFB would continue to generate hazardous wastes during various operations and maintenance activities. Hazardous waste disposal procedures, including off-base disposal procedures, are adequate to handle changes in quantity and would remain the same. Hazardous waste anticipated to be generated by the KC-46A FTU scenario would be consistent with waste generated by the KC-135. Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. Operations involving hexavalent chromium, cadmium, and halon (i.e., an ODS) have been eliminated or minimized to the extent possible (Boeing 2013). Hazardous materials such as trichloroethane (TCE) have available alternates and will not be required for the KC-46A. No new hazardous materials would be added that exceed Altus AFB's current hazardous waste processes.

#### *4.1.9.3 Environmental Restoration Program*

Modifications and/or additions to existing buildings for the FTU scenario at Altus AFB under the proposed action would occur in proximity to existing Environmental Restoration Program (ERP) sites. The USAF would coordinate with the restoration office before any modifications are initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current Environmental Impact Analysis Process (EIAP) practices as specified in AFI 32-7061, AFI 32-7020, and AFI 32-1021.

The USAF would ensure that modifications are coordinated with ongoing remediation or investigation activities at any ERP site. However, if existing plans and standard construction practices are followed, there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required.

The FTU scenario would require the addition of a tail enclosure and tool crib expansion to Building 285 and the addition of a tail enclosure and fuel cell expansion to Building 518. Both Building 285 and Building 518 are located over Ground Water Monitoring Unit (GWMU) 1, which has TCE groundwater contamination and is currently undergoing remediation efforts (Bitney 2013). Past construction has occurred at the base in areas within GWMU 1. The depth to groundwater across the base is approximately 8 to 10 feet below the ground (Bitney 2013). Based on the relatively shallow water table, it is possible that groundwater may be encountered during construction. Past experience indicates that it is unlikely the GWMU 1 groundwater has concentrations that would cause it to be classified as a hazardous waste. Institutional controls at Altus AFB that apply to construction include considering the potential of vapor intrusion if building or digging in areas of high groundwater VOCs and prohibition of groundwater use.

The FTU scenario would require the addition of a Squadron Operations/Aircraft Maintenance Unit to Building 193 and the construction of a hydrant pit about 500 feet east of Building 193. Both the building and hydrant pit are located above GWMU 2, which has TCE groundwater contamination and is currently undergoing remediation efforts (Bitney 2013). The same institutional controls that apply to GWMU 1 also apply to GWMU 2.

The FTU scenario would require the addition of a Flight Training Center within the footprint of current Building 171. There are two existing groundwater monitoring wells (WL343 and WL415) near the proposed construction area that may need to be abandoned and replaced.

#### *4.1.9.4 MOB 1 Scenario Hazardous Materials*

Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through HAZMART are adequate to handle the changes anticipated with implementation of the MOB 1 scenario but would be expanded to meet the increased use.

##### *4.1.9.4.1 Aboveground and Underground Storage Tanks*

The addition of KC-46A aircraft at Altus AFB would increase the maximum daily consumption of JP-8. The increase in fuel consumption would be supported by the current base infrastructure and proposed construction of fuel tanks, pumps, and a hydrant system. Some of the new and remodeled facilities would require the addition of new ASTs, USTs, and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to OWSs, if required, to contain releases of petroleum products. The Altus AFB Integrated Contingency Plan (Altus AFB 2012c) would subsequently need to be amended to capture any changes in facility design, construction operation, or maintenance that materially affect the potential for a discharge.

##### *4.1.9.4.2 Toxic Substances*

The primary difference between the KC-46A FTU and MOB 1 scenarios at Altus AFB would be the additional buildings that are proposed to be affected under the MOB 1 scenario. The same plans, provisions, and requirements for ACM and LBP described for the FTU scenario would apply to the MOB 1 scenario. Volume II, Appendix E, Table E-2, contains a list of buildings that would be affected by the projects, their years of construction, and their potential for ACMs and LBP to be present.

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A MOB 1 scenario at Altus AFB, and long-term benefits from removal of toxic substances are anticipated.

#### *4.1.9.5 Hazardous Waste Management*

Altus AFB would continue to generate hazardous wastes during various operations and maintenance activities. Hazardous waste disposal procedures, including off-base disposal procedures, are adequate to handle changes in quantity and would remain the same. The wastes proposed to be generated by the KC-46A MOB 1 scenario are consistent with waste generated by the KC-135 mission. It is anticipated that the amount of hazardous waste generated will be comparable or less than the KC-135 mission (Boeing 2013). Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. Operations involving hexavalent chromium, cadmium, and halon have been eliminated or minimized to the extent possible (Boeing 2013). Hazardous materials such as TCE have available alternates and will not be required for the KC-46A. No new hazardous materials would be added that exceed Altus AFB's current hazardous waste processes.

#### *4.1.9.6 Environmental Restoration Program*

Modifications and/or additions to existing buildings for the MOB 1 scenario at Altus AFB would occur in proximity to existing ERP sites. The USAF would coordinate with the restoration office before any modifications are initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current EIAP processes, as specified in AFI 32-7061.

The USAF would ensure that modifications are coordinated with ongoing remediation or investigation activities at any ERP site. However, if existing plans and standard practices are followed, there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required.

Implementation of the KC-46A MOB 1 scenario would require the addition of an interior vault to Building 369. This building overlies GWMU 1, which has TCE groundwater contamination and is currently undergoing remediation efforts (Bitney 2013). Past construction has occurred at the base in areas within GWMU 1. The depth to groundwater across the base is approximately 8 to 10 feet below ground surface (bgs) (Bitney 2013). Based on the relatively shallow water table, it is possible that groundwater could be encountered during construction. Past experience indicates that it is unlikely the GWMU 1 groundwater has concentrations that would cause it to be classified as a hazardous waste. Institutional controls at Altus AFB that apply to construction include considering the potential of vapor intrusion if building or digging in areas of high groundwater VOCs and prohibition of groundwater use.

The proposed action would require the construction of approximately 50 acres of ramp space and aerospace ground equipment apron. The southern part of the ramp and apron is located over Solid Waste Management Unit No. 2. The site is known as the Fire Protection Training Area (FT005) and is located along an intermittent drainage ditch near the 16th green of the base golf course (Altus AFB 2013). FT005 was active from 1956 to 1960. Waste fuels, including oil, solvents, and thinners, were used to ignite the fires. As a result of these activities, the underlying groundwater is contaminated with VOCs at concentrations slightly above USEPA maximum contaminant levels.

Long-term groundwater monitoring continues to occur at the site, but no active remediation is planned. While no further corrective actions were planned for FT005, the site was included in the 2012 Performance Based Remediation contract. Soil with dioxin concentrations above 50 parts per trillion will be removed or treated to meet residential land use standards.

FT005 is located in the extreme northern part of GWMU 2, which has TCE groundwater contamination and is currently undergoing remediation efforts (Bitney 2013). The approximate southern one-third of the ramp and apron would overlie GWMU 2. Groundwater at Site FT005 is located about 6 to 10 feet bgs. The same institutional controls that apply to GWMU 1 also apply to GWMU 2. There are about 14 existing groundwater monitoring wells (WL006, WL009, WL102, WL103, WL106–WL108, WL229, WL517, WL518, WL697, and WL765–WL767) located within or near the proposed ramp and apron construction area that may need to be abandoned and replaced.

The MOB 1 scenario would require C&D activities within the footprint of the fuel tanks, pumps, and hydrant system, which includes two ASTs (Structures 554 and 557), two fuel stands (Structures 564 and 565), and two buildings (Buildings 551 and 563). Three groundwater monitoring wells (WL346–WL348) within the proposed construction area may need to be abandoned and replaced.

As part of the new ramp and apron construction, existing concrete will be demolished and replaced. A substantial volume of construction debris and demolition waste could impact local and regional waste facilities/landfills. Further investigation and consideration of waste diversion strategies are needed to determine the degree of impact on solid waste facilities.

#### **4.1.10 Socioeconomics**

##### *4.1.10.1 FTU Scenario Socioeconomics Consequences*

###### **4.1.10.1.1 Population**

The current personnel at Altus AFB and the change projected to be necessary to support the KC-46A FTU scenario are provided in Table 2-4. Implementation of the FTU scenario at Altus AFB would potentially add up to 578 people to Jackson County, resulting in a 2.2 percent increase in the county population. This potential increase is based on the assumption that the 252 DoD civilians, 20 part-time Reservists, and 23 contractors would be from Jackson County and areas surrounding the base.

###### **4.1.10.1.2 Economic Activity (Employment and Earnings)**

As shown in Table 2-4, implementation of the FTU scenario at Altus AFB would increase the work force assigned to Altus AFB by 619 personnel. The personnel would comprise 144 full-time military, 200 students, 252 DoD civilians, 20 part-time Reservists, and 23 contractors. The addition of 619 people to Altus AFB would increase on-base jobs from 3,891 to 4,510, or an approximate 15.9 percent increase. The Impact Analysis for Planning (IMPLAN) model calculates that approximately 375 indirect and induced jobs in the ROI would result from implementation of the FTU scenario, with most of the jobs being created in industries such as food services, retail stores, and individual and family services. With a 2012 unemployment rate of 4.7 percent, it is expected that the local labor force would be sufficient to fill these new jobs without a migration of workers into the area.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,403 direct, indirect, and induced jobs would be created (MIG 2012). The USAF estimates that approximately \$52 million in construction and \$11 million in operating and maintenance (O&M) expenditures would be required to implement the FTU scenario at Altus AFB. The total amount of construction and O&M expenditures could generate approximately 909 jobs primarily within the construction industry or related industries, including food services and retail stores (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs. The indirect and induced income associated with construction expenditures is estimated to be approximately \$4 million. These jobs, and the related income, would be temporary during the construction activity.

#### 4.1.10.1.3 Housing

Under the assumption that only DoD civilians, part-time Reservists, and contractors would be from the local population (as stated in Section 4.1.10.1.1) and that all incoming full-time military personnel would require off-base housing, there would be a potential need for 144 housing units. Under these assumptions and based on the number of vacant homes described in Section 3.1.10.1.3, the housing market in the ROI would be anticipated to support this need.

All 200 projected pilot and boom operator/loadmaster students, while assigned to the FTU, would be assumed to be in transient status. It would also be assumed that 180 of these 200 students would be lodged in either on- or off-base facilities as available. Only 20 of these 200 students would be assumed to be non-prior service Airmen, and would thus be required to live in an on-base dormitory. Therefore, under the FTU scenario at Altus AFB, there would be a potential need for 180 lodging units either on or off base and 20 dormitory units on base to support the average daily student load of 200. Based on the current and projected capacities of both on- and off-base lodging and on-base dormitories, there would be adequate facilities available to support the 200 students.

#### 4.1.10.1.4 Education

As shown in Table 2-4, the overall change in the number of military dependents and family members accompanying additional full-time USAF personnel under the FTU scenario would be approximately 234 persons. The total number of dependents, including spouse and children, was estimated at 2.5 times 65 percent of full-time military personnel only. The total number of children was estimated at 1.5 times 65 percent of full-time military personnel, since it was assumed each military member would be accompanied by a spouse. Thus, it is estimated that 140 military dependents would be of school age. Therefore, approximately 140 students would be anticipated to enter any of the six school districts in Jackson County. Based on the number of school districts and schools in the county, as well as current class sizes, the schools in Jackson County would have the capacity to support the incoming students. The students entering the local schools would be of varying ages and would be expected to live in different parts of Jackson County, with the majority in the City of Altus, where there appears to be adequate housing and education facilities. However, space available for new enrollment depends on the timing of the relocation and which schools the students would attend. A large influx of students over a short period could result in capacity constraints and could require additional personnel.

#### 4.1.10.1.5 Public Services

Jackson County represents a large community with police, fire, and other services. Implementation of the FTU scenario would add up to approximately 578 USAF-related personnel and dependents, which represents a 2.2 percent increase in the existing county population. Demand for public services in Jackson County has increased for several years, and this demand would continue to increase with the projected change in the population.

#### 4.1.10.1.6 Base Services

Base services such as medical facilities, child development centers (CDCs), dining, fitness, and Visiting Quarters have adequate infrastructure and staffing to support active-duty, students, and dependents projected under the FTU scenario.

### 4.1.10.2 *MOB 1 Scenario Socioeconomics Consequences*

#### 4.1.10.2.1 Population

The current personnel at Altus AFB and the projected change anticipated to support the KC-46A MOB 1 scenario are provided in Table 2-7. Implementation of the MOB 1 scenario would potentially add up to 4,917 people to Jackson County, resulting in an approximate 18.6 percent increase in the county population. This potential increase is based on the assumption that the 29 DoD civilians, 930 part-time Reservists, and 20 contractors would be from Jackson County and areas surrounding the base.

#### 4.1.10.2.2 Economic Activity (Employment and Earnings)

As shown in Table 2-7, implementation of the MOB 1 scenario at Altus AFB would increase the work force assigned to Altus AFB by 1,922 total personnel. The personnel would comprise 1,873 full-time military, 29 DoD civilians, and 20 contractors. The addition of 1,922 personnel at Altus AFB would increase on-base jobs from 3,891 to 5,813, an approximate 49 percent increase. The IMPLAN model calculates that approximately 662 indirect and induced jobs in the ROI would result from implementation of the MOB 1 scenario, with most of the jobs being created in industries such as food services, retail stores, individual and family services, and offices of physicians and other health practitioners. With a 2012 unemployment rate of 4.7 percent (the most recent annual average for labor force data by county), it is expected that the local labor force would be sufficient to fill these new jobs without a migration of workers into the area.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited amount of economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,403 direct, indirect, and induced jobs would be created. The USAF estimates that approximately \$400 million in construction expenditures would be associated with implementation of the MOB 1 scenario at Altus AFB. This amount could generate approximately 5,628 jobs primarily within the construction industry or related industries, including food services, retail stores, and architectural and engineering services (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs without a migration of workers into the area. The indirect and induced income associated with construction expenditures is estimated to be approximately \$24 million. These jobs, and the related income, would be temporary during the construction activity.

#### 4.1.10.2.3 Housing

Under the assumption that only DoD civilians, part-time Reservists, and contractors would be from the local population (as stated in Section 4.1.10.2.1) and that all incoming full-time military personnel would require off-base housing, there would be a potential need for 1,873 off-base housing units. Prior to implementing the MOB 1 scenario, the USAF would complete a Housing Requirements and Market Analysis (HRMA) to determine the number of suitable and available housing units within the HRMA-defined market area. The housing market in the ROI and surrounding communities and counties would be able to support this need.

#### 4.1.10.2.4 Education

As shown in Table 2-7, the overall change in the number of military dependents and family members accompanying additional USAF personnel associated with the MOB 1 scenario would be approximately 3,044 persons. The total number of dependents, including spouse and children, was estimated at 2.5 times 65 percent of full-time military personnel only. The total number of children was estimated at 1.5 times 65 percent of full-time military personnel, since it was assumed each military member would be accompanied by a spouse. Thus, it is estimated that 1,826 military dependents would be anticipated to be of school age. Therefore, approximately 1,826 students would be anticipated to enter any of the six school districts in Jackson County. Based on the number of school districts and schools in the county, as well as class size for the state, the schools in the county would have the capacity to support the incoming population. The students entering the local schools would be of varying ages and would be expected to live in different parts of Jackson County. Space available for new enrollments depends on the timing of the relocation and which schools the students would attend. A large influx of students over a short period would result in capacity constraints and would require additional personnel.

#### 4.1.10.2.5 Public Services

Jackson County represents a large community with police, fire, and other services. Implementation of the MOB 1 scenario would add approximately 4,917 USAF-related personnel and dependents, which represents an 18.6 percent increase of the existing county population. Although this would increase the demand for public services, because of the need for additional housing, some of the incoming personnel might reside in surrounding counties where additional public services are available. For example, Lawton, Oklahoma, in adjacent Comanche County, could be one location where incoming USAF-related personnel could relocate. Demand for public services in Jackson County has increased for several years, and this demand would continue to increase with the projected change in the population.

#### 4.1.10.2.6 Base Services

Several base services would require additional manpower and facilities to accommodate the incoming personnel associated with the MOB 1 scenario. The base CDC is currently operating at 46 percent capacity and therefore has excess capacity. Based on the current enrollment at the CDC and expected increases for the MOB 1, there would be an estimated six new manpower requirements. No increase in dining facility requirements is needed to accommodate the incoming personnel; however, an increase of 10 food service personnel would be necessary to meet additional dining facility demand.

Based on the potential base population increase, an addition to the base fitness center would be required. As detailed in Table 2-6, the 14,400-square-foot addition to the fitness center would support the incoming personnel. In addition, construction of a 75-room Visiting Quarters would

support the new maintenance training qualification mission. The addition to the fitness center and the new Visiting Quarters might require additional manpower. The additional manpower and facility requirements that have been identified would be able to support the incoming personnel.

#### 4.1.11 Environmental Justice and the Protection of Children

##### 4.1.11.1 FTU Scenario Environmental Justice and the Protection of Children Consequences

Analysis of the FTU scenario noise contours relative to the baseline contours at Altus AFB indicates that off-base populations of minorities, low-income persons, and children would not be exposed to noise levels above what is occurring under the baseline conditions (see Table 4-9). Therefore, implementation of the FTU scenario at Altus AFB is not anticipated to result in disproportionate impacts on these off-base populations.

##### 4.1.11.2 MOB 1 Scenario Environmental Justice and the Protection of Children Consequences

Analysis of the MOB 1 scenario noise contours relative to the baseline contours at Altus AFB indicates that off-base populations of minorities, low-income persons, and children would not be exposed to noise levels above what is occurring under the baseline conditions (see Table 4-9). Therefore, implementation of the MOB 1 scenario at Altus AFB is not anticipated to result in disproportionate impacts on these off-base populations.

**Table 4-9. Percentage of Off-Base Populations Potentially Exposed to Noise Levels of 65 dB DNL or Greater for Altus AFB**

Scenario	Percentage Minority			Percentage Low-Income			Percentage Children (Under 18)		
	65–69 dB DNL	70–74 dB DNL	75–79 dB DNL	65–69 dB DNL	70–74 dB DNL	75–79 dB DNL	65–69 dB DNL	70–74 dB DNL	75–79 dB DNL
FTU	15%	14%	15%	10%	10%	10%	30%	31%	36%
MOB 1	15%	14%	15%	10%	10%	10%	31%	32%	37%
Baseline (Existing Conditions)	15%	14%	15%	10%	10%	10%	31%	32%	37%
Region of Comparison	34%			19%			26%		

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## 4.2 FAIRCHILD AIR FORCE BASE (MOB 1)

This section of Chapter 4 presents the operational and environmental factors specific to Fairchild AFB. Section 2.4.2 describes the facilities and infrastructure, personnel, and flight operations requirements of the KC-46A MOB 1 scenario and the specific actions at Fairchild AFB that would be required to implement this scenario. As described in Section 4.5, the No Action Alternative would mean that the KC-46A MOB 1 scenario would not be implemented at Fairchild AFB at this time. In addition to no facility or personnel changes, there would be no change in based aircraft at Fairchild AFB and aircraft operations would continue as described for baseline conditions. The 92nd Air Refueling Wing (ARW) would continue to fly aerial refueling missions with a PAA of 30 KC-135 aircraft. In addition, the Survival, Evasion, Resistance, and Escape (SERE), Joint Personnel Recovery Agency (JPRA), and KC-135 Weapons Instructor Course (WIC) missions would continue.

### 4.2.1 Noise

#### 4.2.1.1 Base Vicinity

The noise levels of the KC-46A aircraft are slightly less than the KC-135 aircraft that currently operate at Fairchild AFB. Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in Table 4-10. The difference between a KC-135 and a KC-46A during approach would be noticeable, but takeoff noise levels for the two aircraft would be more difficult to distinguish (see Table 4-10). The sound generated by helicopters has very different characteristics from fixed-wing aircraft. The SEL generated by a KC-46A would generally be less than that generated by an H-1 helicopter but slightly more than that generated by an H-60 helicopter. Helicopters rarely fly above 2,000 feet AGL. However, noise levels at higher altitudes are given for comparison with other aircraft types.

**Table 4-10. Aircraft Noise Level Comparison at Fairchild AFB**

Aircraft	Power Setting	Sound Exposure Level at Overflight Distance (in decibels)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-46A	60% N1	96	91	85	79	70	61
KC-135	65% NF	100	95	90	84	75	67
H-1 (helicopter)	80 kts	104	100	96	91	83	75
H-60 (helicopter)	80 kts	90	86	83	79	72	66
Takeoff							
KC-46A	92% N1	107	102	96	88	78	69
KC-135	90% NF	105	100	95	90	81	73
H-1 (helicopter)	80 kts	104	100	96	91	83	75
H-60 (helicopter)	80 kts	90	86	83	79	72	66

**Key:** Power Units: N1 – engine speed at Location No. 1; NF – engine fan revolutions per minute; kts – knots airspeed

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results for KC-135 and RNM for H-1 and H-60.

Aircrews operating the KC-46A aircraft would use similar flight procedures to those used by the KC-135 aircrews currently based at Fairchild AFB. Approximately 25 percent of takeoffs and 40 percent of landings would be tactical. Tactical operations are designed to reduce the risk of ground-based threats to the aircraft in forward operating locations. KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.

As part of the Air National Guard (ANG) associate unit operations, the KC-46A would be flown on some weekend days. KC-46A training flights would be conducted 312 days per year. However, mission sorties, in which the aircraft is supporting real-world operations, could take place on any day of the year. The KC-135 is currently flown 365 days per year.

Approximately 30,507 annual airfield operations are conducted at Fairchild AFB under current conditions. Under the MOB 1 scenario, KC-135 aircraft currently based at Fairchild AFB would be relocated, resulting in a decrease of 14,914 operations. Approximately 33,710 airfield operations would be conducted by KC-46A aircraft per year, resulting in 49,303 total annual airfield operations.

Noise levels near Fairchild AFB were calculated using the computer program NOISEMAP (Version 7.2), accounting for location-specific effects of terrain and ground impedance. Figure 4-3 depicts the noise contours associated with implementation of the KC-46A MOB 1 scenario at Fairchild AFB. The noise contours are displayed in 5 dB increments from 65 dB DNL to 85 dB DNL and are compared to the baseline contours. Details of the methods used to calculate noise levels and the population affected by elevated noise can be found in Volume II, Appendix B, Section B, Section B.1.3. Implementation of the KC-46A MOB 1 scenario would increase the number of off-base acres affected by noise levels equal to or greater than 65 dB DNL from 162 to 215 acres (see Table 4-11). The number of estimated off-base residents exposed to this same level of noise would increase from 15 to 17. Annoyance is a subjective response that is often triggered by interference of noise with activities. Individuals engaged in activities more easily disrupted by noise (e.g., conversation, sleeping, or watching television) are more likely to become annoyed than others. Although the reaction of an individual to noise depends on a wide variety of factors, social surveys have found a correlation between the time-averaged noise level as measured in DNL and the percentage of the affected population that is highly annoyed (see Volume II, Appendix C, Section C.1.3.1). It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed by noise, and this has been adopted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.2.7 and Volume II, Appendix C, Section C.1.3.2).

**Table 4-11. KC-46A MOB 1 Scenario Noise Impacts Relative to Baseline Noise at Fairchild AFB**

Noise Level (dB DNL)	Baseline Conditions			MOB 1 Scenario		
	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	15	162	621	17	212	631
70–74	0	0	523	0	3	496
75–79	0	0	363	0	0	333
80–84	0	0	139	0	0	170
≥85	0	0	26	0	0	28
<b>Total</b>	<b>15</b>	<b>162</b>	<b>1,672</b>	<b>17</b>	<b>215</b>	<b>1,658</b>

Implementation of the KC-46A MOB 1 scenario at Fairchild AFB would not expose off-base areas to noise levels greater than 80 dB DNL. Two buildings on Fairchild AFB would be exposed to noise levels of 80 dB DNL or greater. Hearing loss risk among people working in high-noise environments on Fairchild AFB would continue to be assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

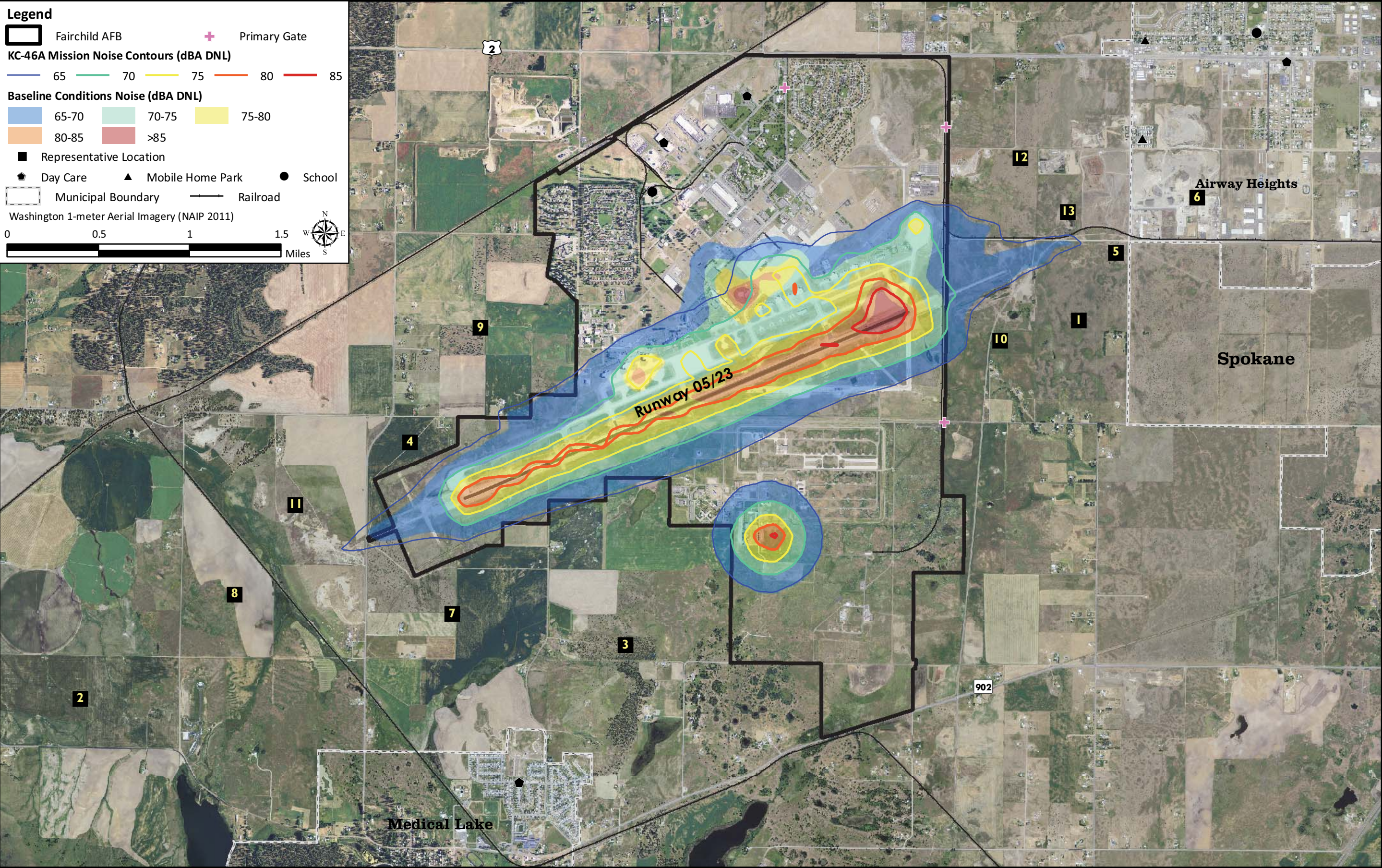


Figure 4-3. KC-46A MOB 1 Scenario and Baseline Noise Contours at Fairchild AFB

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Table 4-12 compares noise conditions at several representative locations in the area near Fairchild AFB. The representative locations, depicted on Figure 4-3, were established based on central points of U.S. Census subdivisions, and therefore do not represent specific noise-sensitive receptors.

**Table 4-12. KC-46A MOB 1 Scenario Noise Levels at Representative Locations Near Fairchild AFB**

Location ID	Baseline Conditions		MOB 1 Scenario	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	55	98–114	55	98–114
2	56	95–113	56	95–113
3	59	103–111	57	103–111
4	61	103–116	62	103–116
5	60	104–116	60	104–116
6	61	104–112	61	104–112
7	56	96–112	57	96–112
8	62	102–116	62	102–116
9	57	100–110	57	100–110
10	60	105–116	60	105–116
11	59	98–115	61	98–115
12	61	103–113	62	103–113
13	62	105–117	62	105–117

<sup>a</sup> “Top 5 SELs” refers to the range of loudest five event types experienced at the location (see Attachment C-1).

The DNL at 4 of the locations studied would increase by 1 dB. The DNL at Location 3 would decrease by 2 dB due to the removal of the KC-135 operations that had been the driver for increased noise in that area. The range of the top five SEL events would not change at any of the 13 locations in Table 4-12. At Fairchild AFB, departure operations from transient aircraft such as the EA-6B and F-18, and the based H-1 helicopter, make up the loudest five overflight events (dB SEL). Transient operations are not expected to change. As mentioned previously, KC-46A flying operations are slightly quieter than operation of the existing KC-135 aircraft. Increases in time-averaged noise levels near the base would be a result of increases in operations tempo instead of the addition of a louder aircraft type. A more detailed description of the loudest operations at each location can be found in Table C-1-2 in Volume II, Appendix C, Attachment C-1.

As described in Section 2.3.3, IOT&E operations would be conducted at the MOB 1 location. IOT&E operations would be expected to be indistinguishable to members of the public from standard MOB 1 flying operations and would taper off before the MOB 1 reaches full operations tempo such that annual operations listed counts for MOB 1 would not be exceeded.

C&D activities in support of the proposed beddown would be conducted in the context of an active AFB where aircraft and other types of noise are a normal part of the environment. Although equipment would be muffled, construction activities unavoidably generate localized increases in noise qualitatively different from aircraft noise. For example, a typical backhoe, dozer, and crane generate up to approximately 78, 82, and 81 dB, respectively, at a distance of 50 feet (FHWA 2006). Construction noise would be minimized in accordance with local regulations and would be temporary and intermittent, lasting only the duration of the project. Furthermore, construction activities would be expected to take place during normal

working hours (i.e., 7:00 A.M. to 5:00 P.M.). Some people living or working near the construction sites may notice and be annoyed by the noise, but noise impacts would not be substantial enough to be considered significant.

#### **4.2.2 Air Quality**

The air quality analysis estimated the magnitude of emissions that would result from implementation of the proposed KC-46A construction and operational activities at Fairchild AFB. The estimation of proposed operational emissions is based on the net change in emissions between existing KC-135 aircraft operations and the projected KC-46A operations. Volume II, Appendix D, Section D.2.1, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from proposed sources at Fairchild AFB.

The immediate area surrounding Fairchild AFB within Spokane County currently attains all of the NAAQS. Therefore, the analysis used the PSD threshold of 250 tons per year of a pollutant as an indicator of significance of projected air quality impacts for this area. The western boundaries of the Spokane maintenance areas for CO and PM<sub>10</sub> extend to within 4 miles of the eastern portion of Fairchild AFB. The MOB 1 scenario at Fairchild AFB would generate commuter vehicle trips from these areas. In addition, some KC-46A flights would traverse the western portions of these areas below 3,000 feet AGL. Therefore, the analysis also estimated the amount of emissions from these proposed sources that would occur within these areas. The analysis used the applicable conformity thresholds for these areas as indicators of significance (100 tons per year of CO and PM<sub>10</sub>).

**Construction** – The KC-46A beddown at Fairchild AFB would require construction and/or renovation of airfield facilities, including training facilities, hangars, taxiways, and maintenance and fueling facilities. Air quality impacts due to proposed construction activities would occur from (1) combustive emissions due to the use of fossil fuel-powered equipment and (2) fugitive dust emissions (PM<sub>10</sub>/PM<sub>2.5</sub>) due to the operation of equipment on exposed soil. Construction activity data were developed to estimate proposed construction equipment usages and associated combustive and fugitive dust emissions for each project alternative.

Factors needed to derive construction source emission rates were obtained from the *Compilation of Air Pollutant Emission Factors*, AP-42, Volume I (USEPA 1995); the USEPA NONROAD2008a model for nonroad construction equipment (USEPA 2009a); and the USEPA MOVES2010b model for on-road vehicles (USEPA 2013b).

Inclusion of standard construction practices and LEED Silver certification into proposed construction activities would potentially reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by 50 percent from uncontrolled levels. Section 4.1.2 identifies the standard construction practices that would control fugitive dust.

Table 4-13 presents estimates of emissions from construction activities that would result from the KC-46A operations proposed for Fairchild AFB. These data show that, for each year of construction, total emissions would fall well below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions associated with the KC-46A beddown would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the operation of equipment on unpaved surfaces.

**Table 4-13. Annual Construction Emissions Under the MOB 1 Scenario at Fairchild AFB**

Year	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
CY 2014	2.48	13.86	26.61	0.73	11.80	11.25	3,621
CY 2015	0.83	4.67	8.75	0.25	4.09	1.10	1,256
CY 2016	0.03	0.48	0.28	0.01	0.65	0.09	55
CY 2017	0.12	4.00	0.63	0.02	4.90	0.07	144
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

**Operations** – Sources associated with operation of the proposed KC-46A MOB 1 scenario at Fairchild AFB and existing KC-135 operations replaced by the KC-46A MOB 1 scenario would include (1) operations and engine maintenance/testing of aircraft, (2) onsite POVs and GMVs, (3) offsite POV commutes, (4) AGE, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and other sources. Operational data used to calculate projected KC-46A aircraft emissions were obtained from data used in the project noise analyses (see Section 4.2.1). Factors used to calculate combustive emissions for the KC-46A aircraft were based on emissions data developed by Pratt and Whitney for the PW4062 engine (ICAO 2013b). The operational times in mode for the KC-46A engine were based on those currently used for the KC-135 aircraft (Air Force Civil Engineer Center 2013).

Emissions from most non-aircraft sources generated by the proposed KC-46A operations were estimated by multiplying existing emissions for these sources at Fairchild AFB by the ratio of total employment populations associated with the KC-46A beddown and baseline conditions at Fairchild AFB. The air quality analysis used CY 2012 to define existing emissions, as it included the most recent calendar year of operational activities at Fairchild AFB (see Table 3-14). However, emissions from the usage of AGE by the KC-46A were based on AGE usages for existing KC-135 aircraft at Fairchild AFB. In addition, VOC emissions from mobile fuel transfer operations were estimated by considering the net change in landing and takeoff cycles between the proposed KC-46A aircraft and existing KC-135 mission at Fairchild AFB.

The analysis of proposed aircraft operations is limited to operations that occur within the lowest 3,000 feet of the atmosphere, as this is the typical depth of the atmospheric mixing layer where the release of aircraft emissions would affect ground-level pollutant concentrations. In general, aircraft emissions released above the mixing layer would not appreciably affect ground-level air quality.

The analysis of air quality impacts due to implementation of the KC-46A MOB 1 scenario at Fairchild AFB is based on the net change in emissions that would occur from the replacement of existing KC-135 mission with operations from the beddown of 36 KC-46A aircraft. To produce a conservative analysis, it was assumed that all 36 KC-46A aircraft would become operational at Fairchild AFB in CY 2016.

Table 4-14 summarizes the annual operational emissions within Spokane County that would result from implementation of the KC-46A MOB 1 scenario at Fairchild AFB. The data in Table 4-14 show that the net increase in emissions from the replacement of existing KC-135 aircraft operations with operations from 36 KC-46A aircraft would not exceed 250 tons per year for VOCs, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, implementing the KC-46A MOB 1 scenario at Fairchild AFB would produce less than significant impacts on these pollutant levels. However, these data also show that the increase in NO<sub>x</sub> emissions would exceed 250 tons per year. The results of comparison of projected emissions from the action in the Spokane CO and PM<sub>10</sub>

maintenance areas are discussed below. KC-46A aircraft operations and on-wing engine testing activities are the primary contributors to these emission increases.

**Table 4-14. Annual Operations Emissions within Spokane County Under the MOB 1 Scenario at Fairchild AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	50.07	201.74	837.57	45.42	2.92	2.49	125,648
On-Wing Aircraft Engine Testing – KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,286
Aerospace Ground Support Equipment – KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	858
UH-60 Aircraft Operations	0.91	8.00	2.21	0.20	1.50	1.50	1,793
UH-1N Aircraft Operations	0.14	0.68	0.26	0.02	0.24	0.24	169
AGE – Existing Aircraft	3.95	14.49	9.00	0.90	2.20	2.20	1,515
Transient Aircraft	0.56	4.03	4.58	0.18	0.67	0.62	819
On-Wing Aircraft Engine Testing – UH-1M	0.11	0.52	0.06	0.01	0.08	0.08	55
On-Wing Aircraft Engine Testing – UH-60	0.02	0.52	0.16	0.01	0.14	0.14	96
Government-Owned Vehicles	0.03	0.64	0.69	0.00	0.04	0.03	207
Privately Owned Vehicles – On Base	0.04	3.14	0.53	0.01	0.05	0.03	521
Privately Owned Vehicles – Off Base	1.27	82.69	12.52	0.22	1.58	0.84	13,366
Mobile Fuel Transfer Operations	0.36	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	14.49	11.48	14.05	0.09	1.05	1.05	14,748
<b>Total Fairchild AFB Emissions – MOB 1 Scenario</b>	<b>86.86</b>	<b>381.69</b>	<b>915.36</b>	<b>49.58</b>	<b>11.36</b>	<b>10.04</b>	<b>166,078</b>
<b>Existing Fairchild AFB Emissions</b>	<b>41.96</b>	<b>286.84</b>	<b>305.27</b>	<b>24.22</b>	<b>10.65</b>	<b>9.77</b>	<b>95,699</b>
<b>Fairchild AFB MOB 1 Scenario Minus Existing Emissions<sup>b</sup></b>	<b>44.90</b>	<b>94.84/ (6.69)</b>	<b>610.10</b>	<b>25.36</b>	<b>0.72/ (0.03)</b>	<b>0.27</b>	<b>70,379</b>
<b>MOB 1 Scenario Net Emissions Increase Fraction of Existing Conditions</b>	<b>1.07</b>	<b>0.33</b>	<b>2.00</b>	<b>1.05</b>	<b>0.07</b>	<b>0.03</b>	<b>0.74</b>
<b>MOB 1 Scenario Net Emissions Increase Fraction of Spokane County Emissions</b>	<b>0.001</b>	<b>0.001</b>	<b>0.04</b>	<b>0.08</b>	<b>0.00001</b>	<b>0.0001</b>	<b>0.03</b>
<b>PSD/Conformity Threshold</b>	<b>250</b>	<b>250/100</b>	<b>250</b>	<b>250</b>	<b>250/100</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.

<sup>b</sup> The second set of CO and PM<sub>10</sub> emissions presented are those that only would occur within the Spokane CO and PM<sub>10</sub> maintenance areas.

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

Emissions of NO<sub>x</sub> resulting from implementation of the KC-46A MOB 1 scenario within Spokane County were compared to the most recent Spokane County emissions inventory (CY 2008) to determine the relative magnitude of these emissions and their potential to combine with baseline emissions and contribute to an exceedance of an ambient air quality standard. The NO<sub>x</sub> emission

increases resulting from the proposed KC-46A operations would amount to about 4 percent of the total NO<sub>x</sub> emissions generated by Spokane County in 2008 (see Table 3-13). The majority of proposed NO<sub>x</sub> emissions result from KC-46A aircraft operations up to an altitude of 3,000 feet AGL and across several square miles that comprise the Fairchild AFB airspace and adjoining aircraft flight patterns. These emissions would be adequately dispersed through this volume of atmosphere to the point that they would not result in substantial ground-level impacts in a localized area. Given that the county attains the nitrogen dioxide (NO<sub>2</sub>) NAAQS by a wide margin, these NO<sub>x</sub> emission increases would likely not be substantial enough to contribute to an exceedance of the NO<sub>2</sub> NAAQS.

Maximum O<sub>3</sub> levels in the Spokane region are near the national 8-hour O<sub>3</sub> standard. For example, the Cheney air monitoring station, located approximately 10 miles southeast of Fairchild AFB, recorded an O<sub>3</sub> concentration that was about 93 percent of the value of the NAAQS in 2012 (SRCAA 2013b). As mentioned above, emissions from the proposed KC-46A aircraft operations would be diluted over a large volume of atmosphere across the Fairchild AFB project region. These factors would dilute the impact of NO<sub>x</sub> (and VOC) emissions from the proposed action within a localized area and to ambient O<sub>3</sub> levels. As a result, the increase in emissions may not be substantial enough to contribute to an exceedance of the O<sub>3</sub> NAAQS. Nonetheless, the NO<sub>x</sub> emissions projected to result from implementation of the KC-46A MOB 1 scenario represent a 4 percent annual increase and the potential for a 2 ton per day, or more, increase in NO<sub>x</sub> emissions in the ROI which, when taken together with the slight annual/daily increase in VOCs from the action in combination with all other sources of both precursor emissions in the region, could be substantial enough to contribute to an exceedance of the O<sub>3</sub> NAAQS.

The air quality analysis evaluated the net change in emissions that would occur within the Spokane CO and PM<sub>10</sub> maintenance areas due to the MOB 1 scenario versus existing operations at Fairchild AFB. This analysis relied on the following assumptions: (1) within the CO maintenance area, the average commuter trip would traverse 4.0 miles of the area and the amount of KC-46A/KC-135 closed patterns that would occur below 3,000 feet AGL within the area was 4 percent and (2) within the PM<sub>10</sub> maintenance area, the average commuter trip would traverse 4.7 miles of the area and the amount of KC-46A/KC-135 closed patterns that would occur below 3,000 feet AGL within the area was 5 percent. The results of the analysis determined that proposed MOB 1 operations within these areas would produce slightly lower CO and PM<sub>10</sub> emissions compared to those generated by existing operations at Fairchild AFB. This is the case, as lower CO and PM<sub>10</sub> emission standards for commuter vehicles in the future (CY 2016 vs. CY 2012) would outweigh the slight increase in KC-46A aircraft CO and PM<sub>10</sub> emissions generated by MOB 1 operations within the CO and PM<sub>10</sub> maintenance areas. As a result, these net changes in emissions generated within the Spokane CO and PM<sub>10</sub> maintenance areas would not exceed the applicable conformity thresholds of 100 tons per year for CO or PM<sub>10</sub>. Therefore, the MOB 1 scenario at Fairchild AFB would produce less than significant CO and PM<sub>10</sub> impacts within these areas.

Proposed operations under the MOB 1 scenario at Fairchild AFB would emit HAPs that could potentially impact public health. Proposed KC-46A aircraft operations and on-wing engine testing activities would generate the majority of HAPs from this scenario. As discussed above for proposed criteria pollutant impacts, since proposed KC-46A operations would occur intermittently over a volume of atmosphere, they would produce minimal ambient impacts of HAPs in a localized area.

Early in its planning, the USAF reconsidered its operational assumptions and projections to avoid or reduce potential impacts to the extent feasible. This resulted in the development of

alternatives that reduced the emissions of criteria pollutants to the extent feasible by reducing the number of near-field operations, such as landing and take-off operations. At this time, the USAF is not aware of any other feasible mitigations that could be applied to further reduce the emissions impact from KC-46A aircraft operations and on-wing engine testing activities.

In addition to presenting estimates of GHG emissions that would result from KC-46A operations at Fairchild AFB, the following considers how climate change may impact the KC-46A beddown at Fairchild AFB. For Fairchild AFB, the projected climate change impact of concern is increased temperatures, as documented in *Global Climate Change Impacts in the United States* (USGCRP 2009). This report predicts that the region surrounding Fairchild AFB will experience (1) increased droughts and wildfires and (2) reduced springtime snow packs, summer stream flows, and water supplies. While operations at Fairchild AFB have already adapted to droughts and scarce water supplies, exacerbation of these conditions in the future may increase the cost of proposed operations and could impede operations during extreme events. Additional measures could be needed to mitigate such impacts.

### **4.2.3 Safety**

This section addresses the potential environmental consequences to flight and ground safety that could occur at or in the vicinity of Fairchild AFB with implementation of the KC-46A MOB 1 scenario.

#### *4.2.3.1 Flight Safety*

**Aircraft Mishaps** – The KC-46A MOB 1 scenario at Fairchild AFB would replace the existing KC-135 mission. As described in Section 4.1.3, Safety, for Altus AFB, the KC-46A is a commercial variant of the existing Boeing 767 aircraft with a proven safety record.

As discussed previously, the accident rate for the KC-46A is expected to be similar to that of the commercial airframe upon which it is based. Using the accident rate of 0.36 per flight cycle, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low (less than one every 100 years; see Volume II, Appendix B, Section B.3.3.1).

Therefore, implementation of the KC-46A MOB 1 scenario at Fairchild AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps even with the additional aircraft and increased flight operations.

**Bird/Wildlife-Aircraft Strike Hazard** – Replacement of the 30 KC-135 aircraft with 36 KC-46A aircraft is not anticipated to increase the risk of aircraft accidents due to bird/wildlife strikes. Ongoing elements of the Fairchild AFB BASH Plan would continue.

Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a tool for analysis and correlation of bird habitat, migration, and breeding characteristics with key environmental and manmade geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings, which take place prior to any sortie.

With proposed KC-46A flight operations similar to those being conducted by KC-135 aircraft at Fairchild AFB, the overall potential for bird/wildlife-aircraft strikes is not anticipated to be significantly greater than current levels. All safety actions in place for existing KC-135 operations

would continue to be in place for the KC-46A aircraft. Fairchild AFB personnel have developed aggressive procedures designed to minimize the occurrence of bird/wildlife-aircraft strikes, and have documented detailed procedures to monitor and react to heightened risk of bird strikes. When bird/wildlife-aircraft strike hazard risks increase, limits are placed on low-altitude flight and some types of training (e.g., multiple approaches, closed-pattern pattern work) in the airport and airspace environments. Special briefings are provided to pilots whenever the potential for bird strikes is high within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.

#### *4.2.3.2 Ground Safety*

There are no aspects of the KC-46A MOB 1 scenario at Fairchild AFB that are expected to create new or unique ground safety issues not already addressed by current policies and procedures. Operations and maintenance procedures, as they relate to ground safety, are conducted by base personnel and would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and AFOSH standards.

No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A MOB 1 scenario. All renovation and construction activities would comply with all applicable OSHA regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable AFOSH and OSHA requirements are implemented.

The KC-46A would be operated in an airfield environment similar to the current operational environment. Since the KC-46A is a new airframe and would require response actions specific to the aircraft, the emergency and mishap response plans would be updated to include procedures and response actions necessary to address a mishap involving the KC-46A and associated equipment. With this update, the Fairchild AFB airfield safety conditions would be similar to baseline conditions. Therefore, no significant impact would occur from aircraft mishaps or mishap response.

As indicated in Section 3.2.7, there is incompatible development within the northern APZ II. Portions of the CZs on both ends of the runway currently extend outside the base boundary. See Volume II, Appendix B, Figure B-1, for the typical generic CZ and APZ dimensions. However, Fairchild AFB does have easements that grant the base control over the development of that land. Fairchild AFB would continue working with developers to highlight the Air Installation Compatible Use Zone (AICUZ) guidelines.

#### **4.2.4 Soils and Water**

All of the C&D activities associated with implementing the proposed KC-46A MOB 1 scenario would occur within the Fairchild AFB boundary. The proposed disturbed area for the projects associated with the KC-46A MOB 1 scenario would not exceed 40 acres (the area for new construction and additions/alterations). The majority of construction, renovation, and demolition activities associated with the KC-46A MOB 1 scenario would occur in Drainage Basin 1; the renovation of Building 1037 would occur in Drainage Basin 5.

The majority of the proposed construction, renovation, and demolition activities would occur in areas already developed and/or previously disturbed by excavation in the northern portion of the

main base. The proposed new apron and fuels upgrade project along the flightline would add approximately 14 acres of impervious surface in Basin 1. Representing only a 2 percent increase in this basin, this development is not anticipated to result in adverse impacts on soil or water resources. Although these areas have predominantly been disturbed in the past, new construction activities would have the potential to disturb underlying soils. The soil map units in the areas of the proposed action are the Phoebe-Bong complex and the Cheney-Uhlig complex. Construction limitations for the Phoebe-Bong complex include instability of excavated walls, potential slope failure, moderate corrosion of concrete, and high wind erosion potential. Construction limitations for the Cheney-Uhlig complex include unstable excavation walls and moderate wind erosion potential.

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

The Fairchild AFB SWPPP for industrial facilities identifies control practices to be followed for spill prevention and response, routine inspection of discharges at sites, and proper training of employees. The base is also required to obtain permit coverage for all construction activities over 1 acre under USEPA's 2008 NPDES General Permit for Stormwater Discharges from Construction Activities to ensure that sedimentation does not impact water quality. No construction activities would begin until a project-specific SWPPP is completed.

No sensitive groundwater resources, surface water resources, or floodplains are known to occur in areas planned for any of the KC-46A development projects.

#### **4.2.5 Biological Resources**

##### *4.2.5.1 Vegetation*

The beddown of the proposed MOB 1 scenario at Fairchild AFB would have similar potential impacts on vegetation as described for the MOB 1 scenario at Altus AFB. All of the projects would occur in currently developed or disturbed areas that provide little wildlife habitat value and are not anticipated to result in significant impacts on vegetation.

##### *4.2.5.2 Wildlife*

Beddown requirements and potential impacts on wildlife would be similar to those described previously for the MOB 1 scenario at Altus AFB. Although birds, small mammals, invertebrates, and various other small wildlife species may utilize the maintained areas affected by the proposed action, these areas do not function as principal wildlife habitat. Infrastructure projects are not proposed to occur in the south base area, where wetlands and higher-value wildlife habitat occurs. The effects of noise produced by construction, renovation, and demolition activities would be similar to those described for Altus AFB, having a negligible impact on wildlife populations.

Airfield operations would increase at Fairchild AFB, resulting in increased noise on and near the base. However, the KC-46A is quieter than the existing aircraft and the KC-135 currently operating at Fairchild AFB. Potential effects on wildlife would be similar to those described for the MOB 1 scenario at Altus AFB, including short-term noise-related stress and behavioral responses. However, DNL noise contours would increase marginally on and near the base and

would not substantially increase the amount of land exposed to increased noise levels. Noise contours are not anticipated to appreciably change in the south base area as a result of the KC-46A flight operations.

Increased operations would increase the potential for aircraft to strike birds and other wildlife in the air and on the runway. However, continued adherence to the base's BASH Plan (USAF 2010a) would minimize the risk of collisions. To prevent aircraft strikes of red-tailed hawks specifically, Fairchild AFB participates in an extraction program with the U.S. Department of Agriculture's Animal and Plant Health Inspection Service.

Overall impacts on wildlife would be similar to those described for the MOB 1 scenario at Altus AFB. Significant wildlife impacts are not anticipated to result from implementation of the KC-46A MOB 1 scenario at Fairchild AFB.

#### 4.2.5.3 *Special-Status Species*

No federally threatened or endangered species are known to occur at Fairchild AFB in the ROI for the KC-46A beddown. On rare occasions bald eagles have been observed migrating through the base. No known bald eagle (*Haliaeetus leucocephalus*) or golden eagle (*Aquila chrysaetos*) nests have been reported on base (Fairchild AFB 2012a). No significant impacts on bald and golden eagle populations are anticipated due to flying operations associated with the proposed action.

There are no other federally or state-listed bird species and/or designated critical habitat. There would be no significant impacts on special-status species resulting from implementation of the MOB 1 scenario at Fairchild AFB.

During the 2012 herptile survey, Columbia spotted frogs (*Rana luteiventris*) were the most commonly detected species at Fairchild AFB. Populations were found utilizing different habitats in the southern portion of Fairchild AFB. The largest numbers of spotted frogs were detected in free-flowing ditches. Both adults and larvae were detected in very large numbers in the ditch paralleling the flightline. Primarily due to the conservation concern of isolated populations in the southern part of its range, the Columbia spotted frog is considered a Washington state-listed candidate species (USFWS 2013d). Because the proposed facilities and infrastructure updates would not occur within the southern portion of the base, implementation of the MOB 1 scenario at Fairchild AFB is not likely to adversely affect the Columbia spotted frog.

The southern portion of Fairchild AFB contains vernal pools and swale that support Spalding's catchfly (*Silene spaldingii*) (federally and state-listed threatened species), American pillwort (*Pilularia americana*) (state-listed threatened species), inch-high rush (*Juncus uncialis*) (state-listed sensitive species), mousetail (*Myosurus laevicaulis*) (state-listed sensitive species), and Northwestern yellowflax (*Sclerolinon digynum*) (state-listed threatened species) (Fairchild AFB 2011e).

Current protection measures for Spalding's catchfly on Fairchild AFB include (1) protect existing populations and habitat and (2) maintain occupied and potential habitat in a suitable condition (Fairchild AFB 2011e). Because these special-status plant species do not occur within the facilities and infrastructure project areas, there would be no significant impacts on Spalding's catchfly, American pillwort, inch-high rush, mousetail, or Northwestern yellowflax resulting from implementation of the MOB 1 scenario at Fairchild AFB.

There are no other federally or state-listed plant species and/or designated critical habitat on Fairchild AFB. There would be no significant impacts on special-status species resulting from implementation of the MOB 1 scenario at Fairchild AFB.

#### 4.2.5.4 Wetlands

There are no known wetlands in any of the areas proposed for development and implementation of the KC-46A MOB 1 scenario at Fairchild AFB. Therefore, implementation of the MOB 1 scenario is not anticipated to directly or indirectly impact wetlands.

#### 4.2.6 Cultural Resources

At Fairchild AFB, implementation of the KC-46A MOB 1 scenario is proposed to include the demolition of 9 buildings; renovation of 11 buildings; additions/alterations to 2 buildings, including trainers; and modifications to roads, parking, and taxiways. The Washington SHPO (Department of Archaeology and Historic Preservation [DAHP]) has concurred that Building 2050, constructed in 1943, is eligible for the NRHP (see Volume II, Appendix A, Section A.5.2). Renovations to this building, proposed under the KC-46A MOB 1 scenario, would have an adverse effect on the historic integrity of the property. The DAHP has concurred with this determination of effect and is still considering the effect of the proposed action on Building 2245 (see Volume II, Appendix A, Section A.5.2). Fairchild AFB and the DAHP have amended their existing Memorandum of Agreement (MOA) regarding demolition of historic structures. The MOA amendment includes provisions to reinitiate consultation regarding mitigation for Building 2050 and 2245 should Fairchild AFB be selected for the MOB 1 mission (see Volume II, Appendix A, Section A.5.2.2).

Demolition proposed to occur along the flightline would remove five buildings in the Historic Flight Line District: 1011, 1013, 1015, 1017, and 1019. Three additional buildings in the Historic Flight Line District are proposed for renovation: 1001, 1003, and 1025. One additional building (2120) proposed for demolition is located outside the flightline area. Impacts to all of these buildings were previously mitigated through stipulations agreed to in the signed MOA (92 ARW 2012). Some aspects of the mitigations agreed to in the MOA must be completed prior to demolition and building modifications; others must be completed within 5 years of the signing date (92 ARW 2012).

No impacts on archaeological historic properties are anticipated to result from implementation of the KC-46A MOB 1 scenario at Fairchild AFB. The base has been inventoried for archaeological resources, and no archaeological resources have been identified within the area of potential effect. Because ground-disturbing activities would occur in previously disturbed contexts, it is extremely unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, addition, or construction. It is still possible that archaeological resources could be buried on Fairchild AFB, although the potential is considered low (Fairchild AFB 2012b). In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the NHPA, as specified in standard operating procedures described in the ICRMP (Fairchild AFB 2012b).

Indirect impacts on cultural resources from population increase or visual intrusions are extremely unlikely. With implementation of the MOB 1 scenario, the population would increase by a small amount relative to the existing population at the base and in the Spokane metropolitan area. New construction would occur in the context of an active Air Force Base, where changes in the infrastructure are common. Visual effects on the historic district would be mitigated by adherence to the MOA. The viewshed of remaining historic properties would not be affected by the proposed construction.

No adverse Section 106 impacts to tribal resources are anticipated. The USAF initiated consultation with four tribes. Responses were received from two tribes indicating no objections

to the USAF's finding of no adverse impact. One of those two tribes requested additional consultation should Fairchild AFB be selected for the MOB 1 mission. Additional efforts were made to contact the remaining two non-responsive tribes without success (see Table A-1 in Volume II, Appendix A, Section A.3). While the USAF values its relationship with all tribes and will continue to consult on other planning efforts or matters of known or potential interest to tribes, Section 106 consultation on the KC-46A MOB 1 beddown proposed alternative at Fairchild AFB is now complete.

#### **4.2.7 Land Use**

##### *4.2.7.1 Physical Development*

The physical development proposed to support the KC-46A MOB 1 scenario at Fairchild AFB would occur along the flightline and adjacent locations where existing industrial-type, administrative, and mission support activities are located. None of the physical development associated with implementation of the KC-46A MOB 1 scenario at Fairchild AFB is anticipated to result in impacts to land use. Subsequent operations and maintenance activities for the proposed KC-46A MOB 1 scenario would conform to current and future land uses on the base.

Impacts from the proposed KC-46A MOB 1 scenario on areas and communities located outside of Fairchild AFB are also anticipated to be negligible and similar to those described in Section 4.1.7.1.1. Implementation of the KC-46A MOB 1 scenario would potentially require approximately 417 housing units, either from the current supply of vacant housing in the area or as new construction. New development would be required to conform to the existing Airport Overlay Zone (AOZ) surrounding Fairchild AFB current zoning and jurisdictional approvals. Base review of new residential development near Fairchild AFB is recommended given the concern about the proposed West Plains Mixed Use Development area and the ongoing process to amend the AOZ (following the 2009 JLUS) as an interim measure. These reviews would protect the base from encroachment and new incompatible development, and would ensure that new housing, which could provide a supply for military families, is planned in accordance with current land uses.

##### *4.2.7.2 Aircraft Operations*

With 36 new KC-46A aircraft replacing the existing 30 KC-135 aircraft, KC-46A aircrews are anticipated to fly 33,710 airfield operations versus the 14,914 airfield operations currently flown by KC-135 aircraft. This proposed increase in operations slightly expands the area exposed to noise equal to or greater than 65 dB DNL by about 39 acres (from approximately 1,834 to 1,873 acres) (see Figure 4-3). The expansion of this projected noise envelope on Fairchild AFB would primarily affect the airfield, the training complex, and aircraft maintenance and industrial areas along the airfield that currently experience high levels of noise.

Outside the base boundary, approximately 53 additional acres of land are expected to be exposed to noise levels equal to or greater than 65 dB DNL. This land primarily supports mining and industrial uses and is mostly vacant and undeveloped. These land uses are compatible with the projected noise levels. Northeast of the runway, land within Spokane County is zoned for mineral uses and light industrial use. A small area of industrial land in the southwest part of the City of Airway Heights would also be affected by this level of noise, but industrial uses are also compatible. No residential areas to the northeast are expected to be exposed to this level of noise.

To the southwest, areas exposed to noise equal to or greater than 65 dB DNL would expand slightly and extend past the railroad line west of the base. Noise exposure would increase to

incompatible levels just above 65 dB DNL over a couple of homes along West Thorpe Road. There are no other homes in this area that are projected to be affected by incompatible noise levels. Local residents, particularly in Medical Lake and Airway Heights, could notice an increase in noise and aircraft activity due to the increased number of operations at the airfield, but projected noise levels would remain below 65 dB DNL. Overall, no significant impacts on land use at Fairchild AFB are anticipated to result from aircraft operations associated with implementation of the KC-46A MOB 1 scenario. Although few impacts are projected, newly approved development near the base suggests that allowable densities may not provide for long-term compatible uses in surrounding areas (USAF 2013c).

#### **4.2.8 Infrastructure**

Refer to Section 3.2.8 for a description of existing infrastructure system capacities and conditions at Fairchild AFB. Table 2-10 provides changes in population due to implementation of the MOB 1 scenario at Fairchild AFB. These changes in population and proposed development were used to determine the impact on infrastructure. The maximum demand or impact on capacity was calculated for the potable water, wastewater, electric, and natural gas systems based on the change in population. To identify maximum demand or impact on these systems, any change in population was assumed to live on base. For the assessment of the transportation infrastructure, any change in population was assumed to reside off base.

##### *4.2.8.1 Potable Water System*

With an average per capita household water use estimation of about 125 GPD (UFC 3-230-03), it is anticipated that the change in population would result in an increase of approximately 0.15 MGD. Implementation of the MOB 1 scenario would increase average daily demand from 16 to 18 percent of the base potable water system capacity and peak demand from 44 to 46 percent.

##### *4.2.8.2 Wastewater*

The USEPA estimates that the average person generates approximately 100 GPD of wastewater between showering, toilet use, and general water use (USEPA 2005). Using this amount as a planning factor along with the change in population, implementation of the MOB 1 scenario would increase wastewater discharge from Fairchild AFB by 0.12 MGD. This would increase the average daily discharge from the base from 39 to 45 percent of base system capacity and peak discharge from 70 to 77 percent. As noted in Section 3.2.8.2, a series of projects to upgrade the system is underway and will reduce historical levels of inflow and infiltration (I&I) by 80 percent.

##### *4.2.8.3 Stormwater System*

The MOB 1 scenario would require demolition of facilities and construction of new facilities. This would take place within the existing developed base flightline and cantonment areas. Table 2-9 identifies projects associated with the MOB 1 scenario; the total disturbed area associated with these projects would not exceed 40 acres (the area for new construction and additions/alterations). The majority of construction, renovation, and demolition activities associated with the KC-46A MOB 1 scenario would occur in Drainage Basin 1; the renovation of Building 1037 would occur in Drainage Basin 5. The proposed new apron and fuels upgrade project would add less than 14 acres of additional impervious surface, for a total of 714.4 acres of impervious surface for Basin 1. This represents a 2 percent increase of impervious surface. Basin 1 drains into two small ponds, which

attenuate the stormwater flow from Basin 1 prior to discharge off base. The capacity of these ponds may need to be increased to handle the additional run-off, as well as to control discharges off base over a longer period of time (USAF 1999).

During the short-term construction period for the MOB 1 scenario, all contractors would be required to comply with applicable statutes, standards, regulations, and procedures regarding stormwater management. During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures.

An SWPPP update would be required, and the requirements of the EISA would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

#### *4.2.8.4 Electrical System*

To estimate the change in residential electrical use associated with personnel and their dependents, data from the USEIA were used to identify that residential consumers averaged about 12.82 MWH per person per year (2,837,631 users) in Washington in 2011 (the best available statistics), with a total of about 36,376,143 MWH consumed (USEIA 2011). Using that amount as a planning factor along with the change in population, implementation of the MOB 1 scenario would increase the state annual residential demand for electricity by 14,755 MWH per year. This represents less than 1 percent of total usage in 2011. Assuming the change in population resides on Fairchild AFB and the population uses electricity at the 2011 residential average rate of 0.35 MWH per person per day, implementation of the MOB 1 scenario would increase the average daily use of electricity by 40.42 MWH per day. The MOB 1 scenario would increase average daily demand by 19 percent of current demand. The north and south substations have the capability to provide redundant power for the entire base, with the exception of limited “load shedding” of non-critical mission requirements during peak loading periods when the north substation is supplying all base loads (the south substation is out of service). There are projects programmed to increase the size of the north substation and increase electrical conductor sizes at critical points to eliminate load shedding for redundant capability.

#### *4.2.8.5 Natural Gas System*

For residential natural gas consumption estimations, data from the USEIA were used to identify that approximately 1,079,277 residential consumers in Washington used about 85,393 MMcf of natural gas in 2011 (USEIA 2011). This equates to an average of about 0.08 MMcf per person per year. Using that amount as a planning factor along with the change in population, implementation of the MOB 1 scenario would increase state annual residential demand for natural gas by 92 MMcf. This represents less than 1 percent of the total state-wide usage in 2011.

#### *4.2.8.6 Solid Waste Management*

All solid waste is collected and transported off site for disposal. Off-base contractors completing any C&D projects at Fairchild AFB would be responsible for disposing of waste generated by these activities. Using methodology developed by the USEPA (USEPA 2009b), it is estimated that implementation of the MOB 1 scenario would result in approximately 22,937 tons of C&D debris.

Disposal of the debris would be through an integrated C&D debris diversion approach or removal to landfills. The integrated C&D debris diversion approach includes reuse, recycling, volume reduction/energy recovery, and similar diversion actions. Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. Much of this material can be recycled, reused, or otherwise diverted from landfills. C&D waste, including waste contaminated with hazardous waste, ACM, LBP, or other undesirable components, would be managed in accordance with AFI 32-7042, "Waste Management." The DoD has set a target C&D debris diversion rate of 60 percent by fiscal year 2015 (DoD 2012). Applying this diversion target rate to the potential amount of C&D debris would result in approximately 13,763 tons of C&D debris being diverted for reuse or recycling and approximately 9,175 tons being placed in landfills. This would potentially be a short-term, minor, adverse impact that the landfill could absorb, as the Graham Road Recycling and Disposal landfill accepts an average of 122,000 tons of waste annually, including C&D waste. The overall remaining capacity of the landfill is 13 million tons with a projected life remaining of 103 years (Waste Management 2013).

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, ACM, LBP, or other hazardous components, would be managed in accordance with AFI 32-7042, "Waste Management."

#### *4.2.8.7 Transportation*

Implementation of any of the facilities and infrastructure projects planned for the proposed KC-46A MOB 1 scenario at Fairchild AFB would require the delivery of materials to, and removal of, construction-related debris from demolition, renovation, and new construction sites. Trucks associated with these activities would access the base via the Rambo Gate, which is used for commercial vehicles. Construction crews would access the base via the Main Gate or the Rambo Gate. Construction-related traffic would comprise a small portion of the total existing traffic volume in the area and at the base. Increased traffic associated with these activities could contribute to increased congestion at the entry gates, delays in the processing of access passes, and degradation of the affected road surfaces.

Additionally, intermittent traffic delays and temporary road closures could result in the immediate vicinity of the facility and infrastructure project sites. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time and by having construction workers use the Rambo Gate instead of the Main Gate. Also, many of the heavy construction vehicles would be driven to the site and kept on base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities have ceased. As a result, no long-term impacts to on- or off-base transportation systems are anticipated.

Implementation of the MOB 1 scenario would result in a minor increase of 438 on-base mission personnel (full-time military, DoD civilians, other base personnel), an increase of approximately 7.5 percent in daily commuting traffic to and from the base. In addition to the increase in personnel, there would also be a small increase in dependent and commercial traffic. This assumes that all personnel and dependents live off base, work standard workdays, and drive individually to the base. This increase in base mission personnel could increase congestion and queuing at the Main Gate and the Thorpe/Rambo Gate during morning and evening rush hours. To minimize the potential for adverse impacts, the base could adjust the schedule of operations to accommodate this increase, upgrade the entry gates (e.g., provide additional lanes), and/or

provide additional personnel at the gates to process security checks during the peak hours. Regional access roads and the on-base road network have adequate capacity to absorb the small amount of additional traffic without major impacts on traffic flow, circulation, or level of service.

#### **4.2.9 Hazardous Materials and Waste**

##### *4.2.9.1 Hazardous Materials Management*

Section 4.1.9.5 describes the hazardous materials management specific to the KC-46A aircraft. No new hazardous materials would be added that exceed Fairchild AFB's current hazardous waste processes. Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through HAZMARTs are adequate to handle the changes anticipated with the replacement of the KC-135 mission (30 aircraft) with the KC-46A MOB 1 mission (36 aircraft), but would be expanded to meet the increased use.

##### *4.2.9.1.1 Aboveground and Underground Storage Tanks*

The replacement of 30 KC-135 aircraft with 36 KC-46A aircraft at Fairchild AFB has the potential to increase the maximum daily consumption of JP-8. The increase in fuel consumption would be supported by the current infrastructure at the base. Some of the new and remodeled facilities would require the addition of new ASTs, USTs, and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to OWSs, if required, to contain releases of petroleum products.

##### *4.2.9.1.2 Toxic Substances*

Several demolition, renovation, and addition/alteration projects are planned as part of the proposed KC-46A MOB 1 scenario. Any renovation, construction, or demolition project proposed at Fairchild AFB would be reviewed to determine if ACM is present. Volume II, Appendix E, Table E-3, contains a list of buildings proposed for modification and their potential to contain ACMs. If it is unknown if ACM is present in the project work area, the asbestos database and shop and real property records would be reviewed to determine the presence of ACM. If it is still unknown if ACM is present in the work area, sampling and analysis for asbestos would be conducted. Any exposed friable asbestos would be removed in accordance with all applicable Federal, state, local, and USAF rules and regulations. Before initiating the ACM work, required notifications to the Spokane Regional Clean Air Agency would be completed. No work on an ACM project would be conducted unless it is performed by persons with current certificates of training in accordance with standards established by OSHA and the USEPA. All ACM wastes would be disposed of within 10 days of removal at a waste disposal site authorized to accept such waste. Additionally, all handling and disposal of ACM wastes would be performed in accordance with the Fairchild AFB Asbestos Management Plan (Fairchild AFB 2011a) and in compliance with Federal, state, and local regulations.

A comprehensive base-wide LBP survey at Fairchild AFB has not been completed. In accordance with the Fairchild AFB Lead Exposure and Lead-Based Paint Management Plan (Fairchild AFB 2011b), all renovation, construction, demolition, and renovation projects proposed at Fairchild AFB would be reviewed to determine if LBP is present and if it would be disturbed. To the extent possible, the presence of LBP within the work area would be identified prior to work beginning. Additionally, an LBP survey would be completed prior to any renovation or demolition work at pre-1980 facilities at Fairchild AFB. Volume II, Appendix E,

Table E-3, contains a list of buildings proposed for modification and their potential to contain LBP. If it is unknown if LBP is present in the project work area, the LBP database and shop and real property records would be reviewed to determine the presence of LBP. If it is still unknown if LBP is present in the work area, sampling and analysis for LBP would be completed. Additionally, the handling and disposal of LBP wastes would be in accordance with the Fairchild AFB Lead Exposure and Lead-Based Paint Management Plan (Fairchild AFB 2011b) and in compliance with Federal, state, and local requirements and regulations.

Because some of the buildings proposed for renovation or demolition were constructed prior to 1979, it is assumed that they could have polychlorinated biphenyl (PCB)-containing equipment (fluorescent light ballasts). The buildings that would be affected by demolition, renovation, or alteration, their years of construction, and their potential for PCB-containing equipment to be present are summarized in Volume II, Appendix E, Table E-3. In facilities proposed for demolition or renovation, any potential PCB-containing equipment not labeled PCB-free or missing date-of-manufacture labels would be removed and handled in accordance with Federal and state regulations and the base Hazardous Waste Management Plan (HWMP) (Fairchild AFB 2011c). PCB-containing materials would be transported off base and disposed of at a hazardous waste disposal facility (Fairchild AFB 2012c).

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A MOB 1 scenario at Fairchild AFB, and long-term benefits from removal of toxic substances are anticipated.

#### *4.2.9.2 Hazardous Waste Management*

Section 4.1.9.4 describes the hazardous waste management specific to the KC-46A aircraft. Fairchild AFB would continue to operate as a large-quantity generator (LQG) and would generate hazardous wastes during various operations and maintenance activities associated with the replacement of KC-135 mission. Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. No new hazardous materials would be added that exceed the base's current hazardous waste processes. The Fairchild AFB HWMP (Fairchild AFB 2011c) would be updated to reflect any change in disposal procedures and any changes of hazardous waste generators and waste accumulation points. No adverse impacts are anticipated from the increased volume. All hazardous wastes would be handled and managed in accordance with Federal, state, and local regulations.

#### *4.2.9.3 Environmental Restoration Program*

Some of the proposed construction, demolition, and renovation projects associated with the KC-46A MOB 1 scenario at Fairchild AFB are on or adjacent to active ERP sites. The USAF would coordinate with the restoration office before any construction, demolition, or renovation is initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current EIAP processes, as specified in AFI 32-7061. Additionally, new construction within ERP sites at Fairchild AFB must be approved by the Facility Utilization Board and coordinated with the 92nd Civil Engineer Squadron.

The USAF will ensure that these projects are coordinated with ongoing remediation or investigation activities at any ERP site. However, if existing plans and procedures are followed,

there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required.

The MOB 1 scenario at Fairchild AFB would require the demolition of Buildings 1011, 1013, 1015, 1017, 1018, 1019, 1021, 1023, and 2120; the renovation or addition/alteration of Buildings 1025, 2005, 2007, 2040, 2045, 2050, and 2097; and the construction of new aprons, a fuel hydrant loop, and a fuel stand within the footprint of ERP Site SS-39. This ERP site consists of TCE-contaminated soil and a TCE and carbon tetrachloride-contaminated groundwater plume extending across the base over an area of approximately 2 miles long and a third of a mile wide. Groundwater within Site SS-39 is encountered at depths ranging from 3 to about 50 feet bgs. Based on the shallow water table in some areas of this site, it is possible that groundwater may be encountered during C&D. ERP Site SS-39 is currently in the remedial action phase and awaiting a Record of Decision (ROD) (Fairchild AFB 2011f, 2013).

ERP Site SS-26 is located along Taxiway 1, adjacent to Buildings 1015, 1017, and 1019, which would be demolished under this alternative. This site is also within the proposed new aprons and fuels upgrade construction area. Contamination associated with this site, benzene in the groundwater, is attributed to leaking jet fuel distribution lines. Groundwater at the site is typically at 6 to 10 feet bgs. Based on the relatively shallow water table, it is possible that groundwater could be encountered during construction. The selected remedy at ERP Site SS-26 is long-term monitoring (Fairchild AFB 2012e, 2013).

ERP Site SS-27 is located east and northeast of Building 1011, which would be demolished under the MOB 1 scenario at Fairchild AFB. This site is also within the proposed new aprons and fuels upgrade construction area. ERP Site SS-27 is associated with a flightline fuel spill that was closed under No Further Action with approval from USEPA and Washington State Department of Ecology.

ERP Site TU-500, the West Defuel Site, is located just north of Buildings 1011 and 1013. These buildings would be demolished as part of the MOB 1 scenario at Fairchild AFB. TU-500 is also within the proposed new aprons and fuels upgrade construction area. This site is associated with a UST that was removed in 1995 and is currently awaiting remedial investigation (some interim remedial action cleanup has occurred). VOCs, mainly benzene, toluene, ethylbenzene, and xylene (BTEX), in the groundwater and soil are the contaminants associated with this site. Groundwater at the site is typically around 8 feet bgs and may be encountered during C&D (Fairchild AFB 2011g, 2013).

ERP Site TU-508 is located under and around Building 2050. This building would be renovated and incur construction as part of the MOB 1 scenario at Fairchild AFB. ERP Site TU-508 is associated with the removal of USTs in 1994 and is currently awaiting completion of a Site Inspection. Lead in soil is the contaminant associated with this site.

There are 41 groundwater monitoring wells (MW-32, MW-33, MW-34, MW-35, MW-66, MW-67, MW-67A, MW-67B, MW-68, MW-107, MW-111, MW-112, MW-183, MW-186, MW-188, MW-189, MW-190, MW-264, MW-297, MW-328, MW-330, MW-334, MW-375, MW-386, MW-387, MW-388, MW-391, MW-392, MW-404, MMW-1013-2, MMW-1013-3, MMW-1013-4, MMW-1015-2, MMW-1015-3, MMW-1015-4, MMW-1017-2, MMW-1017-4,

MMW-1019-3, WDF-MP-9, WDF-MP-10 and WDF-MP-15) located within or near the proposed new aprons and fuels upgrade construction area that may need to be modified or abandoned and replaced.

#### **4.2.10 Socioeconomics**

##### *4.2.10.1 Population*

The current personnel at Fairchild AFB and the projected change anticipated to support the KC-46A MOB 1 scenario are provided in Table 2-10. Implementation of the MOB 1 scenario would potentially add up to 1,095 people to Spokane County, resulting in an approximate 0.2 percent county population increase. This potential increase is based on the assumption that the 1 DoD civilian, 35 part-time Guardsmen, and 20 contractors would be from Spokane County.

##### *4.2.10.2 Economic Activity (Employment and Earnings)*

As shown in Table 2-10, implementation of the MOB 1 scenario at Fairchild AFB would increase the work force by 438 total personnel (after taking into consideration the manpower decrease associated with the KC-135 drawdown). The personnel would comprise 417 full-time military, 1 DoD civilian, and 20 contractors. The addition of 438 personnel at Fairchild AFB would increase on-base jobs from 4,486 to 4,924, or an approximate 9.7 percent increase. The IMPLAN model calculates that approximately 303 indirect and induced jobs in the ROI would be created by implementation of the KC-46A MOB 1 scenario, with most of the jobs being created in industries such as food services, offices of physicians and health practitioners, and private hospitals. With a 2012 unemployment rate of 8.6 percent (the most recent annual average for labor force data by county), it is expected that the local labor force would be sufficient to fill these new jobs without a migration of workers into the area.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,442 direct, indirect, and induced jobs would be created (MIG 2012). The USAF estimates that approximately \$292 million in construction expenditures would be associated with the MOB 1 scenario at Fairchild AFB. This could generate approximately 3,022 jobs primarily within the construction industry or related industries, including food services, retail stores, and architectural and engineering services (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs. The indirect and induced income associated with construction expenditures is estimated to be approximately \$65.5 million. These jobs, and the related income, would be temporary during the construction activity.

##### *4.2.10.3 Housing*

Implementation of the MOB 1 scenario would potentially generate a need for approximately 417 housing units. This is based on the difference between the drawdown of 1,239 full-time military personnel relative to the 1,656 incoming full-time military personnel and the assumption that only full-time military personnel would require housing. Under these assumptions and based on the number of vacant homes described in Section 3.2.10.1.3, the housing market in the ROI would be anticipated to support this need. However, prior to implementing the MOB 1 scenario, an HRMA would be required to determine the number of suitable and available housing units

within the HRMA-defined market area (20 miles or one-hour commute drive from base gate, whichever is shorter). No incoming students would be associated with the MOB 1 scenario at Fairchild AFB.

#### 4.2.10.4 Education

As shown in Table 2-10, the overall change in the number of military dependents and family members accompanying additional USAF personnel associated with the KC-46A MOB 1 scenario and departing with the KC-135 mission would be approximately 678 persons. The total number of school-aged children was estimated at 1.5 times 65 percent of full-time military personnel only for the KC-46A MOB 1 scenario and the existing KC-135 mission. Therefore, approximately 407 students would be anticipated to enter the Spokane Public School District. This change represents a potential 1.4 percent increase in the total enrollment of the Spokane Public School District. Based on the number of schools in the county and the current class sizes, the schools would have the capacity to support the incoming students. The students entering the local schools would be of varying ages and would be expected to live in different parts of Spokane County. However, space available for new enrollments depends on the timing of the relocation and which schools the students would attend. A large influx of students over a short period would result in capacity constraints and would require additional personnel.

#### 4.2.10.5 Public Services

Spokane County represents a large community with police, fire, and other services. The addition of approximately 1,095 USAF-related personnel and dependents would represent a 0.2 percent increase of the existing county population. The increase would not be expected to affect police, fire, or other services.

#### 4.2.10.6 Base Services

Base services have adequate capacity in the CDC, housing, fitness, and dining facilities under the existing infrastructure to support the proposed MOB 1 scenario due to the drawdown of the KC-135 mission.

### 4.2.11 Environmental Justice and the Protection of Children

Analysis of the MOB 1 scenario noise contours relative to the baseline contours at Fairchild AFB indicates that off-base populations of minorities, low-income persons, and children would not be exposed to noise levels above what is occurring under the baseline conditions. Therefore, implementation of the MOB 1 scenario at Fairchild AFB is not anticipated to result in disproportionate impacts on these off-base populations (see Table 4-15).

**Table 4-15. Percentage of Off-Base Population Potentially Exposed to Noise Levels of 65 dB DNL or Greater for Fairchild AFB**

Scenario	Percentage Minority		Percentage Low-Income		Percentage Children (Under 18)	
	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL
MOB 1	15%	0%	26%	0%	20%	0%
Baseline (Existing Conditions)	15%	18%	26%	0%	20%	0%
Region of Comparison	13%		14%		23%	

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### 4.3 GRAND FORKS AIR FORCE BASE (MOB 1)

This section of Chapter 4 presents the operational and environmental factors specific to Grand Forks AFB. Section 2.4 describes the facilities and infrastructure, personnel, and flight operations requirements of the KC-46A MOB 1 scenario and the specific actions at Grand Forks AFB that would be required to implement this scenario. As described in Section 4.5, the No Action Alternative would mean that the KC-46A MOB 1 scenario would not be implemented at Grand Forks AFB at this time. In addition to no facility or personnel changes, there would be no change in based aircraft at Grand Forks AFB and existing remotely piloted aircraft (RPA) operations at Grand Forks AFB would continue as described for baseline conditions. The 319th Air Base Wing (ABW) would continue their base operating and direct operation support mission as described under baseline conditions.

#### 4.3.1 Noise

##### 4.3.1.1 Base Vicinity

KC-46A aircraft are louder than the propeller-driven MQ-1 Predator and MQ-9 Reaper RPA but are not as loud as the jet-powered RQ-4 Global Hawk aircraft in typical landing and takeoff configurations (see Table 4-16). Aircraft flying at higher altitudes may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in the table. KC-135 aircraft, which were based at Grand Forks AFB until recently, are slightly louder than the KC-46A in both landing and takeoff configurations.

**Table 4-16. Aircraft Noise Level Comparison at Grand Forks AFB**

Aircraft	Power Setting	Sound Exposure Level at Overflight Distance (in decibels)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-46A	60% N1	96	91	85	79	70	61
Predator (MQ-1)	50% RPM	77	73	68	63	56	49
Reaper (MQ-9)	50% RPM	82	78	73	68	60	53
Global Hawk (RQ-4)	87% RPM	101	97	92	86	78	70
Takeoff							
KC-46A	92% N1	107	102	96	88	78	69
Predator (MQ-1)	100% RPM	87	82	78	72	65	58
Reaper (MQ-9)	100% RPM	85	81	76	72	65	58
Global Hawk (RQ-4)	100% RPM	117	113	108	102	93	85

**Key:** Power Units: N1 – engine speed at Location No. 1; RPM – revolutions per minute

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results; T-41 used as surrogate noise source for MQ-1; Cessna 441 used as surrogate noise source for MQ-9 (noise reduced 3 dB to account for one TPE331 engine on MQ-9 rather than two on Cessna 441); T-45 used as surrogate noise source for RQ-4.

KC-46A aircraft would use similar flight procedures to those used by the KC-135 aircraft that had been based at Grand Forks AFB until recently. Of the proposed KC-46A operations, approximately 25 percent of takeoffs and 40 percent of landings would be tactical. Tactical operations are designed to reduce the risk of ground-based threats to the aircraft in forward operating locations. The KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.

As part of the ANG associate unit operations, the KC-46A would be flown on some weekend days as part of Guard associate unit operations. KC-46A training flights would be conducted 312 days per year. However, mission sorties, in which the aircraft is supporting real-world operations, could take place on any day of the year. Currently, aircraft at Grand Forks AFB are operated approximately 260 days per year, ANG aircraft are operated 156 days per year, and the Air Combat Command (ACC) Global Hawk aircraft are operated 130 days per year.

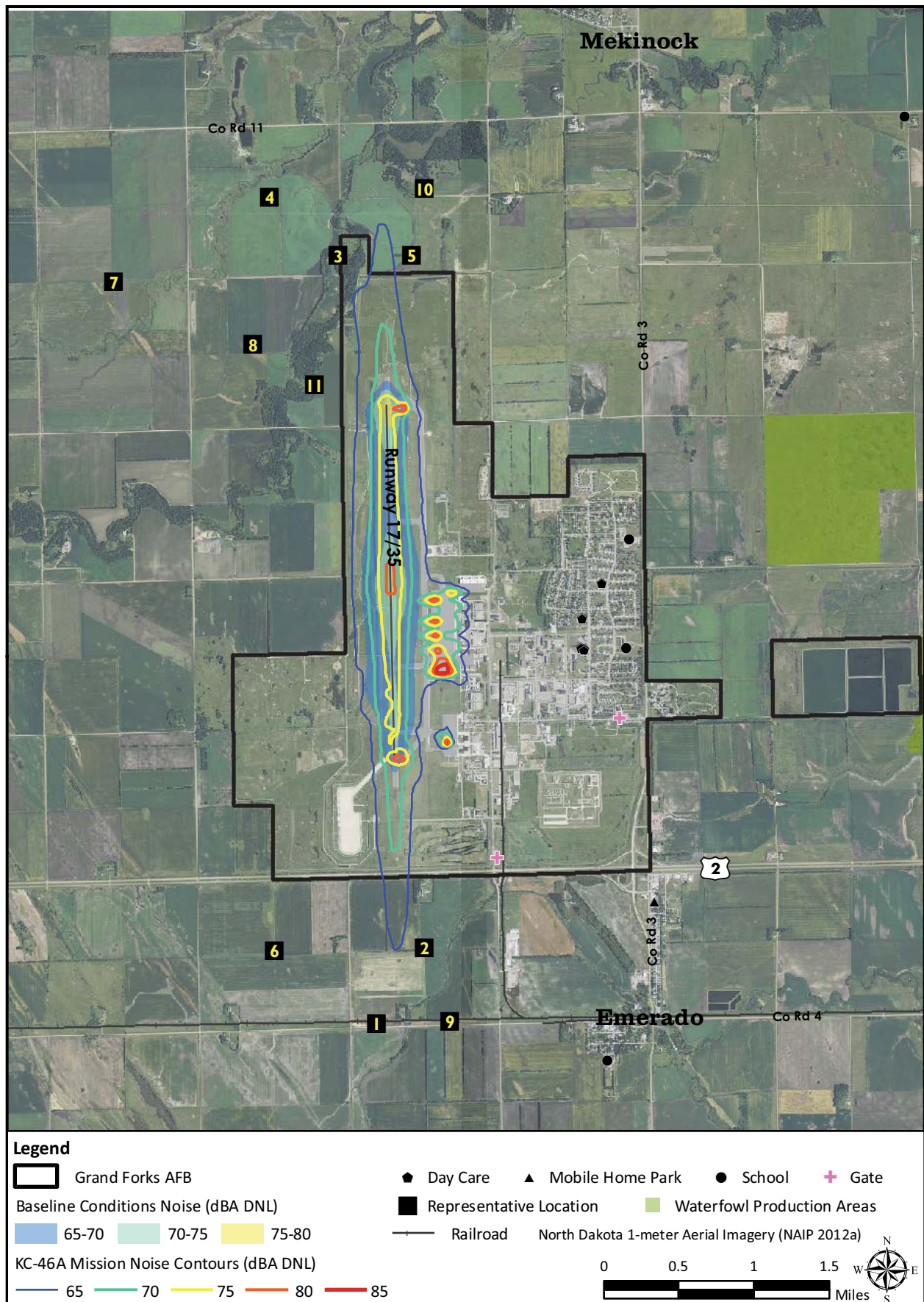
The RPA missions conduct approximately 14,946 airfield operations per year at Grand Forks AFB. Implementation of the KC-46A MOB 1 scenario would add 33,710 airfield operations per year, resulting in 48,656 annual operations. However, this airfield operation tempo would be similar to the missions that Grand Forks AFB has hosted in the past.

Noise levels near Grand Forks AFB were calculated using the computer program NOISEMAP (Version 7.2), with the location-specific effect of terrain and ground impedance included in the analysis. Details of the methods used to calculate noise levels and the population affected by elevated noise can be found in Volume II, Appendix B, Section B.1.3. Annoyance is a subjective response that is often triggered by interference of noise with activities. Individuals engaged in activities more easily disrupted by noise (e.g., conversation, sleeping, or watching television) are more likely to become annoyed than others. Although the reaction of an individual to noise depends on a wide variety of factors, social surveys have found a correlation between the time-averaged noise level as measured in DNL and the percentage of the affected population that is highly annoyed (see Volume II, Appendix C, Section C.1.3.1). It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed by noise, and this has been adopted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.3.7 and Volume II, Appendix C, Section C.1.3.2).

Figure 4-4 depicts the noise contours associated with implementation of the KC-46A MOB 1 scenario at Grand Forks AFB. The noise contours are displayed in 5 dB increments from 65 dB DNL to 85 dB DNL and are compared to the baseline contours. Details of the methods used to calculate noise levels and population affected by elevated noise can be found in Volume II, Appendix B, Section B.1.3. Implementation of the KC-46A MOB 1 scenario would increase the number of off-base acres affected by noise levels equal to or greater than 65 dB DNL from 0 to 62 acres (see Table 4-17). Although there is an increase in off-base acres exposed to 65 dB DNL, the estimated number of off-base residents exposed to 65 dB would remain zero. Analysis of aerial photography of the area did not reveal residences within the 65 dB contour.

**Table 4-17. KC-46A MOB 1 Scenario Noise Impacts Relative to Baseline Noise at Grand Forks AFB**

Noise Level (dB DNL)	Baseline Conditions			MOB 1 Scenario		
	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	0	0	341	0	62	557
70–74	0	0	114	0	0	322
75–79	0	0	10	0	0	175
80–84	0	0	0	0	0	15
≥85	0	0	0	0	0	2
<b>Total</b>	<b>0</b>	<b>0</b>	<b>465</b>	<b>0</b>	<b>62</b>	<b>1,071</b>



**Figure 4-4. KC-46A MOB 1 Scenario and Baseline Noise Contours at Grand Forks AFB**

Implementation of the KC-46A MOB 1 scenario at Grand Forks AFB would not expose off-base areas to noise levels greater than 80 dB DNL. Sixteen acres on Grand Forks AFB would be exposed to noise levels of 80 dB DNL or greater. No structures would be affected by noise levels of 80 dB DNL or greater. Hearing loss risk among people working in high-noise environments on Grand Forks AFB would continue to be assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

Table 4-18 compares noise conditions at several representative locations in the area surrounding Grand Forks AFB under the baseline and MOB 1 conditions. The representative locations, depicted on Figure 4-4, were established based on central points of U.S. Census subdivisions and therefore do not represent a specific noise-sensitive receptor. KC-46A operations would result in substantial DNL increases, with the largest increase (13 dB) occurring at Location 7. These increases are substantial due to the lack of KC-135 aircraft and are the result of more frequent aircraft noise. This is reflected in the ranges of five loudest individual overflight events at the representative locations. At 2 of the 11 locations studied, noise resulting from KC-46A MOB 1 scenario operations would generate the highest SEL. At 8 of the 11 locations studied, KC-46A operations would make up one or more of the remaining top five loudest operation types, increasing the low-end value of the top five SEL range relative to baseline conditions (see Table 4-18). At the locations surveyed, based Global Hawk, proposed KC-46A, and transient aircraft (i.e., KC-10A or KC-135) departure and closed pattern operations would generate the highest SELs. Table C-1-3 in Volume II, Appendix C, Attachment C-1, details the major noise-contributing operations at each location under baseline conditions at Grand Forks AFB.

**Table 4-18. KC-46A MOB 1 Scenario Noise Levels at Representative Locations Near Grand Forks AFB**

Location ID	Baseline Conditions		MOB 1 Scenario	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	53	91–97	60	92–97
2	54	93–97	59	93–97
3	54	90–97	63	90–97
4	49	81–93	57	85–93
5	55	93–98	60	93–98
6	47	80–92	57	86–94
7	46	78–85	59	83–94
8	49	80–93	52	85–93
9	50	87–96	54	88–96
10	53	89–96	57	90–96
11	54	85–97	57	88–97

<sup>a</sup> “Top 5 SELs” refers to the range of loudest five event types experienced at the location (see Attachment C-1).

No tribal lands are located in the immediate vicinity of Grand Forks AFB, and no cultural resource sites (i.e., historic properties per 36 CFR §800.16) or sacred sites (under EO 13007) of importance to tribes are identified within or near the base. During the public involvement phases of this EIS and the NHPA Section 106 planning processes, two tribes issued concern that overflight of aircraft may have the potential to cause a disruption to fasting and prayers of traditional tribal practitioners. An onsite meeting was requested by one of these tribes. On 5 December 2013, USAF representatives met with tribal council members to informally discuss project alternatives. Tribal council members voiced concern over noise generated from flight

operations. KC-46A flight operations in areas not immediately adjacent to Grand Forks AFB would be at high altitudes (18,000 feet mean sea level [MSL]; 17,000 feet AGL); noise generated during these operations is similar to ambient noise levels and subsequently would not be expected to cause disruption to activities. Further discussion of this and other tribal consultation can be found in Section 4.3.6.

Turtle River State Park is located approximately 3 miles west of Grand Forks AFB. Although certain KC-46A operations would be audible at Turtle River State Park, noise levels at the park would be substantially less than 65 dB DNL. Changes to type, frequency, and timing of aircraft noise at the park would not be expected to result in significant noise impacts. Further discussion of the effects of noise on land use can be found in Section 4.3.7.

As described in Section 2.3.3, IOT&E operations would be conducted at the MOB 1 location. IOT&E operations would be expected to be indistinguishable to members of the public from standard MOB 1 flying operations and would taper off before the MOB 1 reaches full operations tempo such that annual operations listed counts for MOB 1 would not be exceeded.

C&D activities in support of the proposed beddown would be conducted in the context of an active AFB where aircraft and other types of noise are a normal part of the environment. Although equipment would be muffled, construction activities unavoidably generate localized increases in noise qualitatively different from aircraft noise. For example, a typical backhoe, dozer, and crane generate up to approximately 78, 82, and 81 dB, respectively, at a distance of 50 feet (FHWA 2006). Construction noise would be minimized in accordance with local regulations and would be temporary and intermittent, lasting only the duration of the project. Furthermore, construction activities would be expected to take place during normal working hours (i.e., 7:00 A.M. to 5:00 P.M.). Some people living or working near the construction sites may notice and be annoyed by the noise, but noise impacts would not be substantial enough to be considered significant.

#### **4.3.2 Air Quality**

The following air quality analysis estimated the magnitude of emissions that would result from the proposed KC-46A construction and operational activities at Grand Forks AFB. The immediate area surrounding Grand Forks AFB within Grand Forks County currently attains all of the NAAQS. Therefore, the analysis used the PSD threshold of 250 tons per year of a pollutant as an indicator of significance of projected air quality impacts. Volume II, Appendix D, Section D.3.1, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from proposed sources at Grand Forks AFB.

**Construction** – The proposed KC-46A MOB 1 scenario at Grand Forks AFB would require construction and/or renovation of airfield facilities, including training facilities, hangars, taxiways, and maintenance and fueling facilities. Air quality impacts resulting from the proposed construction activities would occur from (1) combustive emissions resulting from the use of fossil fuel-powered equipment and (2) fugitive dust emissions (PM<sub>10</sub>/PM<sub>2.5</sub>) resulting from the operation of equipment on exposed soil. Construction activity data were developed to estimate proposed construction equipment usages and associated combustive and fugitive dust emissions for each project alternative.

Factors needed to derive construction source emission rates were obtained from the *Compilation of Air Pollutant Emission Factors*, AP-42, Volume I (USEPA 1995); the USEPA NONROAD2008a model for nonroad construction equipment (USEPA 2009a); and the USEPA MOVES2010b model for on-road vehicles (USEPA 2013b).

Inclusion of standard construction practices and LEED Silver certification into proposed construction activities would potentially reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by 50 percent from uncontrolled levels.

Table 4-19 presents estimates of emissions from construction activities that would occur as a result of implementing the KC-46A MOB 1 scenario at Grand Forks AFB. These data show that, for each year of construction, total emissions would remain below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions from KC-46A construction activities would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the operation of equipment on unpaved surfaces.

**Table 4-19. Annual Construction Emissions Under the MOB 1 Scenario at Grand Forks AFB**

Year/Construction Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
<b>CY 2014</b>							
Demolish All Buildings	0.01	0.10	0.12	0.00	0.09	0.02	18
Total Building Development	3.61	19.64	33.90	0.92	85.81	11.55	4,472
Parking Apron/ Fuels Hydrant Upgrade	0.09	0.49	0.84	0.02	0.51	0.13	110
Airfield Lighting Vault	0.00	0.01	0.02	0.00	0.00	0.00	3
Runway and Overrun Repairs	3.70	24.89	39.26	0.85	4.30	4.22	6,303
Taxiway A Renovations	0.12	0.79	1.26	0.03	0.17	0.14	203
New Taxiway and Parking Apron	0.05	0.31	0.49	0.01	0.06	0.05	78
<b>Total CY 2014</b>	<b>7.58</b>	<b>46.23</b>	<b>75.90</b>	<b>1.84</b>	<b>90.95</b>	<b>16.11</b>	<b>11,188</b>
<b>CY 2015</b>							
Total Building Development	0.47	2.57	4.62	0.13	2.80	0.68	639
Parking Apron/ Fuels Hydrant Upgrade	0.06	0.28	0.46	0.01	0.10	0.05	56
Roads and Parking Upgrades – Asphalt	0.00	0.00	0.01	0.01	0.01	0.00	1
New Taxiway and Parking Apron	0.09	2.38	0.60	0.01	0.09	0.07	107
<b>Total CY 2015</b>	<b>0.62</b>	<b>5.23</b>	<b>5.68</b>	<b>0.16</b>	<b>3.00</b>	<b>0.79</b>	<b>803</b>
<b>CY 2016</b>							
Total Building Development	0.03	0.16	0.31	0.01	0.14	0.04	45
Roads and Parking Upgrades – Asphalt	0.00	0.01	0.01	0.00	0.01	0.00	2
<b>Total CY 2016</b>	<b>0.54</b>	<b>2.96</b>	<b>5.87</b>	<b>0.17</b>	<b>8.04</b>	<b>1.26</b>	<b>984</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

**Operations** – Sources associated with operation of the proposed KC-46A MOB 1 scenario at Grand Forks AFB would include (1) operations and engine maintenance/testing of aircraft, (2) onsite POVs and GMVs, (3) offsite POV commutes, (4) AGE, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and other sources. Operational data used to calculate projected KC-46A aircraft emissions were obtained from data used in the project noise analyses (see Section 4.3.1). Factors used to calculate combustive emissions for the KC-46A aircraft were based on emissions data developed by Pratt and Whitney for the PW4062 engine (ICAO 2013b). The operational times in mode for the KC-46A engine were based on those for the KC-135 aircraft (Air Force Civil Engineer Center 2013).

Emissions from most non-aircraft sources generated by the proposed KC-46A operations were estimated by multiplying existing emissions for these sources at Grand Forks AFB by the ratio of total employment populations associated with the KC-46A beddown and baseline conditions at Grand Forks AFB. The air quality analysis used CY 2012 to define existing emissions, as it included the most recent calendar year of operational activities at Grand Forks AFB (see Table 3-23). However, because no similar aircraft are located at Grand Forks AFB, emissions from the usage of AGE by the KC-46A are based on AGE usages for existing KC-135 aircraft at Fairchild AFB. In addition, VOC emissions from mobile fuel transfer operations were assumed to be the same as those estimated for the proposed KC-46A MOB 1 scenario at Fairchild AFB.

The analysis of proposed aircraft operations is limited to operations that occur within the lowest 3,000 feet of the atmosphere, as this is the typical depth of the atmospheric mixing layer where the release of aircraft emissions would affect ground-level pollutant concentrations. In general, aircraft emissions released above the mixing layer would not appreciably affect ground-level air quality.

The air quality impact analysis of the KC-46A MOB 1 scenario proposed for Grand Forks AFB is based on the increase in emissions associated with the beddown of 36 KC-46A aircraft. To produce a conservative analysis, it was assumed that all KC-46A aircraft would become operational at Grand Forks AFB in CY 2016.

Table 4-20 summarizes the annual operational emissions that would result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB. These data show that the increase in emissions from the addition of 36 KC-46A aircraft would not exceed 250 tons per year for VOCs, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, implementing the KC-46A MOB 1 scenario at Grand Forks AFB would produce less than significant impacts on these pollutant levels. However, these data also show that the increase in CO and NO<sub>x</sub> emissions would exceed 250 tons per year. KC-46A aircraft operations and on-wing engine testing activities are the primary contributors to these emission increases.

The majority of CO and NO<sub>x</sub> emissions would result from the operation of KC-46A aircraft up to an altitude of 3,000 feet AGL and across the several square miles that make up the Grand Forks AFB airspace and adjoining aircraft flight patterns. These emissions would be adequately dispersed through this volume of atmosphere to the point that they would result in no substantial ground-level impacts in a localized area. Grand Forks County generates relatively low amounts of CO and NO<sub>x</sub> emissions (see Table 3-22) and it attains all NAAQS. As a result, proposed CO and NO<sub>x</sub> emissions resulting from KC-46A operations, in combination with existing emissions, would likely not be substantial enough to exceed an ambient air quality standard. Therefore, the proposed KC-46A operations at Grand Forks AFB would produce less than significant air quality impacts.

**Table 4-20. Annual Operations Emissions Under the MOB 1 Scenario at Grand Forks AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	50.07	201.74	837.57	45.42	2.92	2.49	125,648
On-Wing Aircraft Engine Testing – KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,286
Aerospace Ground Support Equipment – KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	857.54
Unmanned Aircraft System Operations	0.56	2.48	12.73	1.04	0.23	0.23	2,910
Transient Aircraft	0.52	1.90	1.18	0.12	0.29	0.29	199
On-Wing Aircraft Engine Testing – Unmanned Aircraft Systems	0.17	0.71	0.80	0.10	0.02	0.02	262
AGE – Existing Aircraft	0.04	0.31	0.35	0.01	0.05	0.05	63
Government-Owned Vehicles	0.02	0.43	0.47	0.00	0.03	0.02	141
Privately Owned Vehicles – On Base	0.24	12.63	2.38	0.03	0.20	0.12	2,121
Privately-Owned Vehicles – Off Base	13.64	102.30	17.14	0.26	2.09	6.28	16,654
Mobile Fuel Transfer Operations	0.36	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	37.95	21.35	28.09	0.17	13.48	2.25	<sup>a</sup>
<b>Total Grand Forks AFB Emissions – MOB 1 Scenario</b>	<b>118.55</b>	<b>397.60</b>	<b>934.45</b>	<b>49.67</b>	<b>20.21</b>	<b>12.58</b>	<b>155,141</b>
<b>Existing Grand Forks AFB Emissions</b>	<b>37.47</b>	<b>111.21</b>	<b>53.46</b>	<b>1.56</b>	<b>10.24</b>	<b>2.95</b>	<b>15,423</b>
<b>Grand Forks AFB MOB 1 Scenario Minus Existing Emissions</b>	<b>81.08</b>	<b>286.39</b>	<b>880.99</b>	<b>48.12</b>	<b>9.98</b>	<b>9.63</b>	<b>139,718</b>
<b>MOB 1 Scenario Net Emissions Increase Fraction of Grand Forks County Emissions</b>	<b>0.01</b>	<b>0.02</b>	<b>0.22</b>	<b>0.07</b>	<b>0.001</b>	<b>0.003</b>	<b>0.29</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

Early in its planning, the USAF reconsidered its operational assumptions and projections to avoid or reduce potential impacts to the extent feasible. This resulted in the development of alternatives that reduced the emissions of criteria pollutants to the extent feasible by reducing the number of near-field operations, such as landing and take-off operations. At this time, the USAF is not aware of any other feasible mitigations that could be applied to further reduce the emissions impact from KC-46A aircraft operations and on-wing engine testing activities.

Proposed operations under the MOB 1 scenario at Grand Forks AFB would emit HAPs that could potentially impact public health. Proposed KC-46A aircraft operations and on-wing engine

testing activities would generate the majority of HAPs from this scenario. As discussed above for proposed criteria pollutant impacts, since proposed KC-46A operations would occur intermittently over a volume of atmosphere, they would produce minimal ambient impacts of HAPs in a localized area.

In addition to presenting estimates of GHG emissions that would result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB, the following considers how climate change may impact the KC-46A beddown at Grand Forks AFB. For Grand Forks AFB, the projected climate change impact of concern is increased temperatures, as documented in *Global Climate Change Impacts in the United States* (USGCRP 2009). This report predicts that the region surrounding Grand Forks AFB will experience (1) shorter winters and warmer summers and (2) an increase in precipitation, particularly heavier rain showers. One of the main outcomes of these conditions will be increased flooding in the region. While operations at Grand Forks AFB have already adapted to past flooding in the region, exacerbation of these conditions in the future may increase the cost of proposed operations and could impede operations during extreme events. Additional measures could be needed to mitigate such impacts.

### **4.3.3 Safety**

This section addresses the potential environmental consequences to flight and ground safety that could occur at or in the vicinity of Grand Forks AFB with implementation of the KC-46A MOB 1 scenario.

Grand Forks AFB has hosted many large aircraft missions in the past, and large aircraft airfield provisions remain in place. However, from a safety perspective, the current RPA missions are very different from tanker missions. The USAF routinely operates large aircraft on the same airfield with RPAs at locations worldwide and, although mixing RPAs with large aircraft is not common in the CONUS, proper planning for safety has proven to be successful in operating mixed aircraft at the same base. Special provisions have been incorporated into the KC-46A parking plan to avoid any safety issues associated with jet blast.

#### *4.3.3.1 Flight Safety*

**Aircraft Mishaps** – Reintroduction of an aerial refueling mission at Grand Forks AFB is not anticipated to increase the flight safety risk. As discussed previously, the accident rate for the KC-46A is expected to be similar to that of the commercial airframe upon which it is based. Using the accident rate of 0.36 per flight cycle, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low (less than one every 100 years; see Volume II, Appendix B, Section B.3.3.1).

Therefore, implementation of the KC-46A MOB 1 scenario at Grand Forks AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps.

Also, utilizing the former KC-135 flight patterns and the existing air refueling (AR) tracks, the KC-46A is not anticipated to create additional flight safety risks. The FAA requires air traffic control deconfliction of RPAs and manned aircraft operating in the Class D airspace around Grand Forks AFB. The basing of 36 KC-46A aircraft is not anticipated to increase the risk of aircraft accidents.

**Bird/Wildlife-Aircraft Strike Hazard** – The addition of 36 KC-46A aircraft and the associated operations would increase the risk of bird/wildlife-aircraft strike hazards at Grand Forks AFB. Grand Forks AFB has hosted multiple large aircraft missions in the past and is familiar with

implementation of BASH programs and the risk of bird/wildlife-aircraft strike hazard events in this area. Ongoing elements of the Grand Forks AFB BASH Plan (Grand Forks AFB 2009b) would continue, with updates as required to address the operations of the KC-46A.

Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a tool for analysis and correlation of bird habitat, migration, and breeding characteristics with key environmental and manmade geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings, which take place prior to any sortie.

With proposed KC-46A flight operations similar to those previously conducted by KC-135 aircraft at Grand Forks AFB, the overall potential for bird/wildlife-aircraft strikes is not anticipated to be significantly greater than past levels. All safety actions that were in place for KC-135 operations would be reinstituted for the KC-46A aircraft. Grand Forks AFB personnel have developed aggressive procedures designed to minimize the occurrence of bird/wildlife-aircraft strikes, and have documented detailed procedures to monitor and react to heightened risk of bird strikes. When bird/wildlife-aircraft strike hazard risks increase, limits are placed on low-altitude flight and some types of training (e.g., multiple approaches, closed-pattern pattern work) in the airport and airspace environments. Special briefings are provided to pilots whenever the potential for bird strikes is high within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.

#### *4.3.3.2 Ground Safety*

The basing and operation of 36 KC-46A aircraft would require close coordination between KC-46A aircrews, RPA pilots, and air traffic control. Operations and maintenance procedures conducted by base personnel would change from current conditions and procedures with AFIs modified to incorporate the new KC-46A. All current activities would continue to be conducted in accordance with applicable regulations, technical orders, and AFOSH standards.

The parking plan for the 36 KC-46A aircraft was specifically designed to minimize conflict with existing RPA missions. No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A MOB 1 scenario at Grand Forks AFB. All renovation and construction activities would comply with all applicable OSHA regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable AFOSH and OSHA requirements are implemented. Proposed construction, renovation, and infrastructure improvement projects related to the KC-46A would be consistent with established APZs, and no significant impacts related to APZs would occur. See Volume II, Appendix B, Figure B-1, for the typical generic CZ and APZ dimensions.

The KC-46A would be operated in an airfield environment similar to the operational environment previously found at Grand Forks AFB. Since the KC-46A is a new airframe and would require response actions specific to the aircraft, the emergency and mishap response plans would be updated to include procedures and response actions necessary to address a mishap involving the KC-46A and associated equipment. With this update, the Grand Forks AFB airfield safety conditions would be similar to baseline conditions. Therefore, no significant impact would occur from aircraft mishaps or mishap response.

#### **4.3.4 Soils and Water**

All of the C&D activities associated with the proposed KC-46A MOB 1 scenario would occur within the Grand Forks AFB boundary. The majority of this work would occur on previously disturbed areas. The total disturbed area for the projects proposed as part of the KC-46A MOB 1 scenario would not exceed 35 acres (the area for new construction and additions/alterations).

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

The Grand Forks AFB SWPPP for industrial facilities identifies control practices to be followed for spill prevention and response, routine inspection of discharges at sites, and proper training of employees. The SWPPP would be updated to reflect the land disturbance associated with the proposed KC-46A development projects.

No sensitive groundwater resources, surface water resources, or floodplains are present within the project area.

#### **4.3.5 Biological Resources**

##### *4.3.5.1 Vegetation*

Implementation of the MOB 1 scenario at Grand Forks AFB would have similar potential impacts on vegetation as described for the MOB 1 scenario at Altus AFB. All of the projects would occur in currently developed or disturbed areas that provide little habitat value and are anticipated to result in no significant impacts on vegetation.

##### *4.3.5.2 Wildlife*

Potential impacts on wildlife would also be similar to the types of impacts previously described for implementation of the MOB 1 scenario at Altus AFB. Although wildlife may periodically use some of the areas planned for the development associated with the MOB 1 scenario, these areas do not likely function as important habitat for wildlife on the base. A combined corrosion control/general maintenance hangar and associated taxiway and apron are planned for a low area north of Building 649. This area contains potentially jurisdictional wetlands. This area contains cool season non-native grasses, and although it could provide some habitat for small mammals, birds, reptiles, and amphibians, it would not be considered high-value wetland habitat. Wetland removal or water quality reduction could decrease value as wildlife habitat. However, mitigation actions would be required to minimize any potential impacts. In addition, wetlands located in the cantonment area would represent a small percentage of similar habitat available in the surrounding region. Noise produced during construction and renovation activities would have a similar effect on wildlife as that described for the other alternative bases, and would result in no significant impacts.

Implementation of the MOB 1 scenario would result in an increase in the number of airfield operations, resulting in increased noise on and near the base similar to what has occurred in the recent past with other large aircraft missions.

As described in Section 4.3.1, noise contours would extend north and south of the base, with the greatest increase occurring in an approximately 1.5-mile arc west of the northern portion of the base. This arc is very similar to the noise contour associated with the previous KC-135 mission

and would overlap riparian habitat along the Turtle River at the base's northwest corner, as well as the state wildlife area adjoining the base's northern boundary.

Increased operations would increase the potential for aircraft to strike birds and other wildlife in the air and on the runway. However, continued adherence to the base's BASH Plan (Grand Forks AFB 2009b) would minimize the risk.

Overall effects on wildlife would be similar to those described for the other alternative bases proposed for the MOB 1 scenario. Significant wildlife impacts are not anticipated to result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB.

#### 4.3.5.3 *Special-Status Species*

No bald eagle nests are known to occur on base. Bald eagles observed at Grand Forks AFB have been documented near the sewage lagoons, occasionally seen feeding on road kill in the area, and observed hunting in the Turtle River riparian area. The Grand Forks AFB Integrated Natural Resource Management Plan (INRMP) (Grand Forks AFB 2011a) contains projected bird monitoring and survey projects, including bald eagle nest surveys. Grand Forks AFB would coordinate with North Dakota Game and Fish if any nests are discovered. No significant impacts on bald eagle populations are anticipated due to the proposed action. Both the peregrine falcons and the yellow rail sighted at the base appear to be migratory species passing through the area. These species were observed in areas that would not be impacted by the facilities and infrastructure projects proposed as part of the MOB 1 scenario at Grand Forks AFB. No significant impacts are anticipated on these species.

There are no other federally listed bird species and/or designated critical habitat on Grand Forks AFB. There are no other state critically imperiled or imperiled bird species at Grand Forks AFB. There would be no significant impacts on special-status species resulting from implementation of the MOB 1 scenario at Grand Forks AFB.

None of the three state-classified plant species documented at Grand Forks AFB during a 2009 biological survey (Grand Forks AFB 2010a) occur within the proposed KC-46A MOB 1 scenario project areas.

Because these special-status plant species do not occur within the project areas, there would be no significant impacts on these species resulting from implementation of the MOB 1 scenario at Grand Forks AFB.

Two fisher carcasses discovered near the Main Gate in 2009 suggest potential fisher presence on Grand Forks AFB. Fishers predominantly inhabit dense low- to mid-elevation mesic forests with abundant physical structure near the ground. Fishers avoid areas with little or no overhead cover, but sufficient coarse woody debris, boulders, or shrub cover may provide suitable overhead cover in non-forested or otherwise open areas.

Potential suitable habitat available on base (such as shrubland and the Turtle River Woodlands to the north) does not occur within the proposed action area. Implementation of the MOB 1 scenario at Grand Forks AFB would not be likely to adversely affect the fisher.

There are no other federally or state-listed plant species and/or designated critical habitat. There would be no significant impacts on special-status species resulting from implementation of the MOB 1 scenario at Grand Forks AFB.

#### 4.3.5.4 Wetlands

A number of small depressional wetlands are located throughout Grand Forks AFB. A preliminary jurisdictional wetland determination survey was conducted in June 2013 and identified approximately 2 acres of potential jurisdictional wetlands that would be impacted by the proposed action (see Figure 2-13).

Proposed construction sites for the new KC-46A Squadron Operation/Aircraft Maintenance Unit building, the Composite Shop, and the Flight Simulator and Building 622 (proposed for renovation) are located close to wetlands that could be affected by erosion and sedimentation, if stormwater run-off is not properly controlled from these sites (see Figure 2-13). It is anticipated that implementation of an effective SWPPP and standard construction practices would prevent stormwater run-off from construction areas from entering wetlands at the base.

A Finding of No Practicable Alternative (FONPA) would be prepared for this project should Grand Forks AFB be selected for the MOB 1 scenario. The FONPA would be prepared in accordance with Title 32 of the *Code of Federal Regulations* (CFR), Part 989, and AFI 32-7064, "Integrated Natural Resources Management." The USAF would work with the U.S. Army Corps of Engineers (USACE) and North Dakota Department of Health to determine if any of the impacted wetlands are subject to regulation under Sections 401/404 of the Clean Water Act (CWA). If wetlands with a watershed greater than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer. The USAF would work with regulators to determine any permit conditions, including mitigation requirements (as appropriate). Permit conditions would specify mitigative measures, such as standard construction practices required to prevent fugitive soil, sediment, and other potential contaminants from migrating off site into other waters of the United States. At a minimum, these construction practices would likely include installation of silt fencing and sediment traps and revegetation of disturbed areas with native plants as soon as possible to contain and prevent any offsite migration of sediment or eroded soils from the project area. These practices would also minimize effects on the area regarding its function as wildlife habitat.

#### 4.3.6 Cultural Resources

At Grand Forks AFB, actions associated with the proposed KC-46A MOB 1 scenario include demolition of three buildings, renovation of eight buildings and runways/roads/taxiways/parking aprons, and additions and/or alterations to four buildings. Grand Forks AFB has determined that one of the buildings proposed to be renovated, Facility 221 (dormitory), is eligible for the NRHP. However, because it is addressed in the Advisory Council on Historic Preservation's (ACHP) Program Comment for Unaccompanied Personnel Housing (ACHP 2006), completion of the mitigation measures specified in the program comment resolved any future adverse effects, including this project's potential impacts. All other buildings associated with implementation of the KC-46A MOB 1 scenario at Grand Forks AFB have been evaluated for NRHP eligibility. None of these facilities have been determined eligible. The North Dakota SHPO has concurred with this finding and has also concurred that no historic properties would be affected (see Volume II, Appendix A, Section A.5.3).

No impact on archaeological historic properties is anticipated to result from implementation of the KC-46A MOB 1 scenario. Ground-disturbing activities would occur in previously disturbed contexts. Those areas not already beneath previously modified surfaces have been surveyed for the presence of archaeological resources; none have been located. It is unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, or addition. It is still possible that archaeological resources could be

buried on Grand Forks AFB (Grand Forks AFB 2012b). In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the NHPA, as specified in standard operating procedures described in the ICRMP (Grand Forks AFB 2012b).

No adverse Section 106 impacts to tribal resources are anticipated. Grand Forks AFB consulted with 23 tribes to determine whether there are any historic properties of religious or cultural significance within the project area. Information and advice was sought through both the NEPA and the NHPA Section 106 planning processes. These tribes are listed in Table A-1 in Volume II, Appendix A, Section A.3. No tribes identified specific properties of religious or cultural significance within the project area.

During the scoping and Draft EIS public comment periods, the Cheyenne River Sioux and the Standing Rock Sioux Tribes expressed concern about aircraft overflying tribal lands. The Standing Rock Sioux Tribe stated that the noise associated with training missions has the potential to disrupt fasting and prayers of traditional practitioners. Further coordination with this tribe included an explanation that KC-46A flight operations in areas away from Grand Forks AFB would occur at such high altitudes (above 18,000 feet MSL; 17,000 feet AGL) that noise generated during these operations would be similar to ambient noise levels and subsequently would not be expected to cause noise disruption to activities. After this further coordination, the Standing Rock Sioux indicated that they had no concerns regarding this project.

In addition to indicating the potential disruptions of aircraft overflying tribal land, the Cheyenne River Sioux Tribe requested to see the results of past cultural resource surveys on the base and expressed concerns related to the KC-46A project, including but not limited to adverse effects to sacred sites, properties of cultural and religious significance to tribes, traditional cultural properties, cultural resources (above and below ground), etc., on past, present, and future ancestral territories. The USAF informally met with the Cheyenne River Sioux Tribe to discuss these concerns. During the meeting, the tribe reiterated concerns for aircraft overflights and questioned the adequacy of past cultural resource surveys conducted at the base. Questions were also asked about hazardous waste management and spills at Grand Forks AFB. The USAF responded to these concerns with a letter that is included in Volume II, Appendix A, Section A.4.3.2. The letter indicated that the USAF does not anticipate any adverse impacts to historic properties of religious or cultural significance as a result of implementing the MOB 1 mission at Grand Forks AFB.

Seven additional tribes responded with requests for information or with confirmation of no objections to the proposed action. The base continued to consult with concerned tribes regarding the proposed action throughout the EIS process and conducted additional efforts to contact non-responsive tribes. All identified concerns regarding potential adverse Section 106 impacts to tribal resources from the proposed action were addressed. This consultation included additional telephone, e-mail, and letter correspondence, and, as described above, meetings with concerned tribes (see Volume II, Appendix A, Sections A.3, A.4, and A.7). While the USAF values its relationship with all tribes and will continue to consult on other planning efforts or matters of known or potential interest to tribes, Section 106 consultation on the KC-46A MOB 1 beddown proposed alternative at Grand Forks AFB is now complete.

#### **4.3.7 Land Use**

##### **4.3.7.1 Physical Development**

The proposed physical development associated with implementation of the KC-46A MOB 1 scenario at Grand Forks AFB would occur in the core part of the base between the airfield and the housing areas on the east side of the runway. The location of the sites and their proposed use

would conform to current and intended land uses for the base. Indirect effects from construction (such as noise, truck traffic, and dust) could result from implementation of the MOB 1 scenario. However, these effects would be temporary and minor; there would be no long-term effect. None of the physical development associated with implementation of the KC-46A MOB 1 scenario at Grand Forks AFB is anticipated to result in impacts to land use.

Implementation of the MOB 1 scenario at Grand Forks AFB would potentially require 1,724 housing units, for which the base has a limited supply. Additional housing requirements, whether filled by new privatized housing on base, vacancies in the local housing supply, or new residential development, are not anticipated to impact land use. Because the area surrounding the base is very rural with no amenities, it is unlikely that major new development would occur near the base. However, any development near the base would be required to obtain local review and approval. It is anticipated that the local planning community would coordinate closely with the base to maintain and control surrounding land uses to enforce the safety and protection of area residents.

#### *4.3.7.2 Aircraft Operations*

Although no large aircraft currently operate from Grand Forks AFB, prior to 2010, the base and surrounding communities hosted large aircraft missions for more than 50 years. With implementation of the MOB 1 scenario, the projected increase in aircraft operations would appear substantial; however, past operational levels were similar.

The primary source of impact on land use resulting from the proposed KC-46A MOB 1 scenario would be from noise. The land compatibility guidelines in Volume II, Appendix C, Section C.1.3.2, are applied in the evaluation of impacts at Grand Forks AFB.

Because there are no large aircraft at Grand Forks AFB and there are only three RPA missions, the current noise footprint is relatively small compared to previous noise footprints of the former KC-135 and B-52 missions. Approximately 544 acres on Grand Forks AFB would be exposed to new noise levels equal to or greater than 65 dB DNL. Family housing, schools, and day care/youth centers on base would remain well outside the area exposed to these levels of noise.

Similar to areas on the base, land outside of the base boundaries that was formerly exposed to these levels of noise would be affected by implementation of the KC-46A MOB 1 scenario. Approximately 62 acres off base would experience noise levels of 65 dB DNL or greater (see Figure 4-4), compared to no areas currently exposed to these levels from the RPA missions. Increases at any given location surrounding the base could be substantial, from 1 to 20 dB. The affected land outside the base is predominantly agricultural or undeveloped. One property with farm structures and a residence located north of the airfield would experience an increase to incompatible noise levels of about 70 dB DNL. A second location with farm structures to the south of the runway along Emerado Road would experience noise levels just above 65 dB DNL. Farm operations are compatible with these noise levels. The City of Emerado would remain outside the projected 65 dB DNL noise affected area, so that the residential areas in this community would remain compatible with the projected noise levels.

Zoning surrounding the base generally supports compatible land use planning and provides for review and protection of the areas surrounding the airfield. The Grand Forks County 2040 Comprehensive Plan recommends limiting residential density to one home per 15 acres in airfield reserve zones. Most of the change in off-base noise would occur in Mekinock Township, which manages its own zoning and development approvals.

The substantial increase in airfield operations at Grand Forks AFB has the potential to increase the potential for accidents. However, because the KC-46A is based on an existing commercial aircraft,

the accident rate is expected to be very low. Overall, no significant impacts on land use at Grand Forks AFB are anticipated to result from implementation of the KC-46A MOB 1 scenario.

#### **4.3.8 Infrastructure**

Refer to Section 3.3.8 for a description of existing infrastructure system capacities and conditions at Grand Forks AFB. Table 2-13 provides changes in population due to implementation of the MOB 1 scenario at Grand Forks AFB. These population changes and the proposed development were used to determine the impact on infrastructure. The maximum demand or impact on capacity was calculated for the potable water, wastewater, electric, and natural gas systems based on the change in population. To identify maximum demand or impact on these systems, any change in population was assumed to live on base. For the assessment of the transportation infrastructure, any change in population was assumed to reside off base.

##### *4.3.8.1 Potable Water System*

According to the U.S. Geological Survey's most recent data, the per capita domestic water consumption for North Dakota is 91 GPD (USGS 2005). It is anticipated that the additional personnel associated with the MOB 1 scenario would create an additional water use demand of 0.48 MGD. Implementation of the MOB 1 scenario would increase daily average demand from 16 percent to 41 percent of the pumping capacity from the City of Grand Forks.

##### *4.3.8.2 Wastewater*

The USEPA estimates that the average person generates approximately 100 GPD of wastewater between showering, toilet use, and general water use (USEPA 2013c). Using this amount as a planning factor and the change in population, the MOB 1 scenario would increase wastewater generation by 0.53 MGD. Based on current base population, it is estimated that 0.41 MGD of wastewater is currently being generated at Grand Forks AFB. The MOB 1 scenario would increase this discharge to 0.94 MGD, which is a 129 percent increase. The current base population utilizes approximately 42 percent of the treatment system capacity, based on the approximate 10,000-person design capacity of the treatment system. Implementation of the MOB 1 scenario would increase this discharge to 94 percent of the treatment system capacity. The lagoons have a total holding capacity of approximately 250 million gallons (MG) and have adequate capacity for future base expansion (Grand Forks AFB 2006a).

The impact of additional personnel on the local (City of Grand Forks) sanitary sewer system was also evaluated assuming that the change in population lived off base. Presently, the City of Grand Forks sanitary sewer system is designed to treat 10 MGD. Currently, the system treats 6.8 MGD on average. Adding 0.53 MGD to the system would increase the percentage of capacity used from 68 percent to 74 percent.

##### *4.3.8.3 Stormwater System*

The MOB 1 scenario would require demolition of facilities and construction of new facilities. This would take place within the existing developed base flightline and cantonment areas. Table 2-12 identifies projects associated with the MOB 1 scenario; the total potential disturbed area associated with these projects would not exceed 35 acres (the area for new construction and additions/alterations). During the short-term construction period for the MOB 1 scenario, all contractors would be required to comply with applicable statutes, standards, regulations, and procedures regarding stormwater management. During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation

in disturbed areas as soon as possible after construction; constructing retention facilities and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures. An SWPPP update would be required, and the requirements of the EISA would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

#### *4.3.8.4 Electrical System*

To estimate the residential electrical use associated with personnel and their dependents, data from the USEIA were used to identify that residential consumers averaged about 13.77 MWH per person per year (330,738 users) in North Dakota in 2011 (the best available statistics), with a total of about 4,552,228 MWH consumed in 2011 (USEIA 2011). Using that amount as a planning factor along with the change in population, implementation of the MOB 1 scenario would increase the state annual residential use of electricity by 71,683 MWH per year. This represents less than 2 percent of total state-wide residential usage in 2011. Assuming the change in population resides on Grand Forks AFB and the population uses electricity at the 2011 residential average rate of 0.04 MWH per person per day, implementation of the MOB 1 scenario would increase the average daily use of electricity by 196.39 MWH per day. The MOB 1 scenario would increase average daily demand from 17 to 43 percent of base system capacity.

#### *4.3.8.5 Natural Gas System*

For residential consumption estimations, according to the USEIA, approximately 125,392 residential consumers in North Dakota used about 10,937 MMcf of natural gas in 2011 (USEIA 2013). This equates to an average of about 0.09 MMcf per person per year. Using that amount as a planning factor along with the change in population, the MOB 1 scenario would increase state annual residential demand for natural gas by 455 MMcf per year. This represents 5 percent of the state-wide residential natural gas usage in 2011. Assuming the change in the population resides on Grand Forks AFB and uses natural gas at the 2011 residential average rate of 0.24 Mcf per person per day, implementation of the MOB 1 scenario would increase the daily use of natural gas by 1,245 Mcf. The MOB 1 scenario would increase average daily natural gas use from 11 to 31 percent of the base capacity.

#### *4.3.8.6 Solid Waste Management*

Using methodology developed by the USEPA (USEPA 2009b) to determine the amount of C&D debris, implementation of the MOB 1 scenario would result in approximately 47,896 tons of C&D debris (USEPA 2009b). Solid waste generated from the proposed C&D activities would consist of building materials such as concrete, metals (e.g., conduit, piping, and wiring), and lumber.

Disposal of the debris would be through an integrated C&D debris diversion approach or removal to landfills. The integrated C&D debris diversion approach includes reuse, recycling, volume reduction/energy recovery, and similar diversion actions. The DoD has set a target C&D debris diversion rate of 60 percent by fiscal year 15 (DoD 2012). Application of the DoD diversion rate would result in approximately 28,738 tons of potential C&D debris being diverted for reuse or recycling and approximately 19,159 tons of debris being placed in landfills. This would be a potentially short-term, minor, adverse impact that the landfill could absorb, as the Berger Inert Landfill is at 55 percent capacity with 15 more years of operation. The landfill has a 10-acre plot for future expansion (Han 2013).

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, ACM, LBP, or other hazardous components, would be managed in accordance with AFI 32-7042, "Waste Management."

#### *4.3.8.7 Transportation*

Implementation of the proposed KC-46A MOB 1 scenario at Grand Forks AFB would require the delivery of materials to and removal of construction-related debris from demolition, renovation, and new construction sites. Trucks associated with these activities would access the base via the Commercial Gate. The North Dakota Department of Transportation stated in a scoping letter that the agency would require the use of the gate on the U.S. Highway 2 interchange for all traffic.

Construction crews would access the base via the Main Gate or the Commercial Gate. Construction-related traffic would minimally add to the total existing traffic volume in the area and on base. Increased traffic associated with these activities could contribute to increased congestion at the entry gates, delays in the processing of access passes, and degradation of the affected road surfaces. Additionally, intermittent traffic delays and temporary road closures could result in the immediate vicinity of the base and infrastructure project sites. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time and by having construction workers use the Commercial Gate instead of the Main Gate. Also, many of the heavy construction vehicles would be driven to the site and kept on base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities are complete. As a result, no long-term impacts to on- or off-base transportation infrastructure are anticipated.

The proposed KC-46A MOB 1 scenario at Grand Forks AFB would result in an approximate 70 percent increase in daily commuting traffic. To evaluate the greatest impact to transportation infrastructure, this assessment assumes that all personnel and dependents would live off base, work standard workdays, and drive individually to the base. This increase in base mission personnel could increase congestion and queuing at the Main Gate and Commercial Gate during morning and evening rush hours. To minimize the potential for adverse impacts, the base could adjust the schedule of operations to accommodate this increase, upgrade the entry gates (e.g., provide additional lanes), and/or provide additional personnel at the gates to process security checks during the peak hours. Regional access roads and the on-base road network have adequate capacity to absorb the minor amount of additional traffic without major impacts on traffic flow, circulation, or level of service.

### **4.3.9 Hazardous Materials and Waste**

#### *4.3.9.1 Hazardous Materials Management*

Section 4.1.9.1 describes the hazardous materials management specific to the KC-46A aircraft. No new hazardous materials would be added that exceed current hazardous waste processes at Grand Forks AFB. Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through HAZMART are adequate to handle the changes anticipated with the addition of the KC-46A MOB 1 scenario, but would be expanded to meet the increased use. The hazardous materials contract would be reviewed to ensure the contractor is able to fully support the addition of the KC-46A MOB 1 mission.

#### 4.3.9.1.1 Aboveground and Underground Storage Tanks

The addition of 36 KC-46A aircraft at Grand Forks AFB is expected to increase the maximum daily consumption of JP-8. The increase in fuel consumption would be supported by the current infrastructure and proposed improvements to the hydrant system at the base. Some of the new and remodeled facilities would require the addition of new ASTs, USTs, and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to OWSs, if required, to contain releases of petroleum products. The Grand Forks AFB Spill Prevention Control and Countermeasures (SPCC) Plan would subsequently need to be amended to capture any changes in facility design, construction operation, or maintenance that materially affect the potential for a discharge (Grand Forks AFB 2009a).

#### 4.3.9.1.2 Toxic Substances

Several demolition and renovation projects are planned as part of the proposed KC-46A MOB 1 scenario at Grand Forks AFB. Any renovation, construction, or demolition proposed at Grand Forks AFB would be reviewed to determine if ACM is present. Volume II, Appendix E, Table E-4, contains a list of buildings proposed for modification and their potential to contain ACMs. Additional testing would be conducted where no data exist. All testing and data collection would be conducted in accordance with the Asbestos Management Plan (Grand Forks AFB 2005). Any exposed friable asbestos would be removed in accordance with USAF policy and applicable health laws, regulations, and standards. A Notification of Demolition and Renovation (Form 17987) would be submitted to the North Dakota Department of Health (NDDH) at least 10 days prior to initiating activities, whether or not asbestos is present (NDDH 2013b). Additionally, the handling and disposal of wastes would be in compliance with Federal and state regulations.

All renovation, construction, or demolition projects proposed at Grand Forks AFB would be reviewed to determine if LBP is present and if it would be disturbed in the performance of the work. Volume II, Appendix E, Table E-4, contains a list of the buildings that would be affected by demolition, renovation, or alteration, their years of construction, and their potential for LBP to be present. In accordance with the Lead-Based Paint Management Plan (Grand Forks AFB 2003), any required renovation activities such as sanding, scraping, or other disturbances of the paint that could generate lead dust would not be performed without prior LBP testing. Buildings being demolished typically do not require LBP abatement unless the LBP would be disturbed by sanding, scraping, dry-cutting, or torching. During the proposed renovations, if paint removal abatement actions are deemed necessary, the base would ensure that adequate precautions are taken during all renovation and demolition activities that disturb LBP. Additionally, all handling and disposal of wastes would be in compliance with Federal and state regulations.

Regarding PCBs, none of the transformers at Grand Forks AFB have PCB-containing oil (Grand Forks AFB 2009a).

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB, and long-term benefits from removal of toxic substances are anticipated.

#### 4.3.9.2 Hazardous Waste Management

Section 4.1.9.4 describes the hazardous waste management specific to the KC-46A aircraft. Grand Forks AFB would generate more hazardous wastes during various operations and

maintenance activities associated with the addition of the 36 KC-46A aircraft associated with the KC-46A MOB 1 scenario. Waste generated by the proposed MOB 1 scenario would be consistent with waste formerly generated by the KC-135. Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. However, no new hazardous materials would be added that exceed current base hazardous waste processes. The Grand Forks AFB HWMP (Grand Forks AFB 2012c) would be updated to reflect any change in generator status, disposal procedures, and any changes of hazardous waste generators and waste accumulation point monitors. Although no adverse impacts are anticipated to result from the increased volumes, this increase could potentially change Grand Forks AFB from a small-quantity generator (SQG) to an LQG. Grand Forks AFB formerly operated as an LQG prior to the departure of the KC-135 mission.

Waste generators are required to monitor their waste-generating activities and to notify the NDDH if they exceed their generator status. NDDH may not require an SQG to begin operating as an LQG for a one-time exceedance of its generator threshold. However, if Grand Forks AFB anticipates exceeding or frequently exceeds its SQG status, the base would be required to notify the NDDH that it is operating as an LQG, and compliance with the Federal and state regulatory requirements for an LQG would be required. NDDH characterizes an LQG as producing 2,200 pounds (1,000 kilograms) or more per month. The *North Dakota Hazardous Waste Compliance Guide* outlines and describes the state regulations (USEPA-delegated authority) (NDDH 2012b).

#### *4.3.9.3 Environmental Restoration Program*

The USAF would coordinate with the restoration office before any construction, renovation, demolition, or modifications are initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current EIAP processes as specified in AFI 32-7061. The USAF will ensure that these projects are coordinated with ongoing remediation or investigation activities at any ERP site. However, if existing plans and procedures are followed, there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, State, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required.

With regard to the ERP sites, the KC-46A MOB 1 scenario at Grand Forks AFB includes the renovation of parking apron/fuel hydrant upgrades and the new construction of a taxiway and parking apron where ERP Site ST008 is located. A groundwater plume with benzene contamination is located in this area and is currently being monitored in the remedial action operation phase with land use controls in place. Groundwater in the area is typically at approximately 3 to 5 feet bgs and may be encountered during C&D. The projects associated with the KC-46A MOB 1 scenario at Grand Forks AFB would require the modification or the abandonment and replacement of five groundwater monitoring wells (MW01, MW02, MW03, MW04, and MW05) associated with Site ST008.

### **4.3.10 Socioeconomics**

#### *4.3.10.1 Population*

The current personnel at Grand Forks AFB and the projected change anticipated to support the KC-46A MOB 1 scenario are provided in Table 2-13. Implementation of the MOB 1 scenario would potentially add up to 4,526 people to Grand Forks County, resulting in an approximate 6.8 percent increase in the county population. This potential increase is based on the assumption that the 3 DoD civilians, 659 part-time Guardsmen, and 20 contractors would be from Grand Forks County.

#### *4.3.10.2 Economic Activity (Employment and Earnings)*

As shown in Table 2-13, the MOB 1 scenario at Grand Forks AFB would increase the work force assigned to Grand Forks AFB by 1,747 total personnel. The personnel would comprise 1,724 full-time military, 3 DoD civilians, and 20 contractors. The addition of 1,747 personnel at Grand Forks AFB would increase on-base jobs from 2,513 to 4,260, or an approximate 69 percent increase. The IMPLAN model calculates that approximately 908 indirect and induced jobs in the ROI would result from implementation of the KC-46A MOB 1 scenario, with most of the jobs being created in industries such as food services, private hospitals, offices of health practitioners, and retail stores. With a 2012 unemployment rate of 3.7 percent, it is expected that the local labor force would be sufficient to fill these new jobs without a migration of workers into the area.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited amount of economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,254 direct, indirect, and induced jobs would be created (MIG 2012). The USAF estimates that approximately \$345 million in construction expenditures would be associated with the MOB 1 scenario at Grand Forks AFB. This amount could generate approximately 4,326 jobs primarily within the construction industry or related industries, including architecture, food services, private hospitals, and retail stores (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs. The indirect and induced income associated with construction expenditures is estimated to be approximately \$51 million. These jobs, and the related income, would be temporary during the construction activity.

#### *4.3.10.3 Housing*

Under the assumptions that only DoD civilians, part-time Guardsmen, and contractors would be from the local population (as stated in Section 4.3.10.1) and that all incoming full-time military personnel would require off-base housing, there would be a potential need for 1,724 off-base housing units to support the full-time military personnel and any military dependents and family members. Under these assumptions and based on the number of vacant homes described in Section 3.3.10.1.3, the housing market in the ROI would be anticipated to support this need. However, prior to implementing the MOB 1 scenario, an HRMA would be required to determine the number of suitable and available housing units within the HRMA-defined market area (20 miles or one-hour commute drive from the base gate, whichever is shorter).

#### 4.3.10.4 Education

As shown in Table 2-13, the overall change in the number of military dependents and family members accompanying the additional USAF personnel associated with the KC-46A MOB 1 scenario would be approximately 2,802 people. The total number of dependents, including spouse and children, was estimated at 2.5 times 65 percent of full-time military personnel only. The total number of children was estimated at 1.5 times 65 percent of full-time military personnel, since it was assumed each military member would be accompanied by a spouse. Thus, it is estimated that 1,681 military dependents would be anticipated to be of school age. Therefore, approximately 1,681 students would be anticipated to enter any of the nine public school districts in Grand Forks County. The students entering the local schools would be of varying ages and would be expected to live in different parts of Grand Forks County. Based on the number of school districts and schools in the county, as well as current class sizes, the schools in Grand Forks County would have the capacity to support the incoming students. However, space availability for new enrollments depends on the timing of the relocation and which schools the students would attend. A large influx of students over a short period could result in capacity constraints and could require additional personnel.

#### 4.3.10.5 Public Services

Grand Forks County represents a large community with police, fire, and other services. The addition of approximately 4,526 military personnel and dependents would represent a 6.8 percent increase of the existing population in Grand Forks County. The increase in the county population would slightly impact police, fire, or other services and could require additional manpower to support the incoming population.

#### 4.3.10.6 Base Services

The base services at Grand Forks AFB have adequate capacity in the CDC, fitness, and dining facilities to support implementation of the proposed MOB 1 scenario.

### 4.3.11 Environmental Justice and the Protection of Children

Analysis of the MOB 1 scenario noise contours relative to the baseline contours at Grand Forks AFB indicates that off-base populations of minorities, low-income persons, and children would not be exposed to noise levels above what is occurring under the baseline conditions (see Table 4-21). Therefore, implementation of the MOB 1 scenario at Grand Forks AFB is not anticipated to result in disproportionate impacts on these off-base populations.

**Table 4-21. Percentage of Off-Base Population Potentially Exposed to Noise Levels of 65 dB DNL or Greater for Grand Forks AFB**

Scenario	Percentage Minority		Percentage Low-Income		Percentage Children (Under 18)	
	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL
MOB 1	0%	0%	0%	0%	0%	0%
Baseline (Existing Conditions)	0%	0%	0%	0%	0%	0%
Region of Comparison	11%		17%		20%	

#### 4.4 McCONNELL AIR FORCE BASE (FTU OR MOB 1)

This section of Chapter 4 presents the operational and environmental factors specific to McConnell AFB. Sections 2.4.4.2 and 2.4.4.3, respectively, describe the facilities and infrastructure, personnel, and flight operations requirements of the FTU and MOB 1 scenarios and the specific actions at McConnell AFB that would be required to implement each scenario.

As described in Section 4.5, the No Action Alternative would mean that neither the KC-46A FTU nor the KC-46A MOB 1 scenario would be implemented at McConnell AFB at this time. In addition to no facility or personnel changes, there would be no change in based aircraft at McConnell AFB; operations at McConnell AFB would continue as described for baseline conditions. The 22 ARW would continue to fly the aerial refueling mission with a PAA of 44 KC-135 aircraft and the personnel described under baseline conditions.

##### 4.4.1 Noise

##### 4.4.1.1 FTU Scenario Noise Consequences

##### 4.4.1.1.1 Base Vicinity

KC-46A aircraft are slightly quieter than the KC-135 aircraft currently based at McConnell AFB (see Table 4-22). The difference between a KC-135 and a KC-46A aircraft during landing would be noticeable, but takeoff noise levels for the two aircraft would be difficult to distinguish. Aircraft flying at higher overflight distances may not have flaps and gear deployed as they would when in landing or takeoff configurations, resulting in slightly lower noise levels than shown in Table 4-22.

**Table 4-22. Aircraft Noise Level Comparison at McConnell AFB**

Aircraft	Power Setting	Sound Exposure Level at Overflight Distance (in decibels)					
		250 feet	500 feet	1,000 feet	2,000 feet	5,000 feet	10,000 feet
Landing							
KC-46A	60% N1	96	91	85	79	70	61
KC-135	65% NF	100	95	90	84	75	67
Takeoff							
KC-46A	92% N1	107	102	96	88	78	69
KC-135	90% NF	105	100	95	90	81	73

**Key:** Power Units: N1 – engine speed at Location No. 1; NF – engine fan revolutions per minute

**Source:** NOISEMAP 7.2 Maximum Omega 10 Results.

KC-46A aircrews would use the same flying procedures (e.g., ground tracks, altitude profiles) currently used by KC-135 aircrews. Aircrews associated with the KC-46A FTU scenario would frequently practice tactical procedures in which the aircraft climbs or descends in the immediate vicinity of the airfield. Tactical training prepares aircrews for operations in forward operating locations in which flying at low-altitudes over land not controlled by friendly forces exposes the aircraft to ground-based threats. Relative to a standard takeoff or landing, a tactical landing concentrates low-altitude flying and noise near the airfield. It is estimated that about 90 percent of KC-46A FTU training sortie takeoffs and 80 percent of training sortie landings would be conducted using tactical procedures.

Per the FTU scenario, the KC-46A would be operated on non-holiday weekdays for a total of 240 operational days per year, approximately mirroring the operational patterns of current

KC-135 operations. On an average busy flying day, aircrews would fly 7.5 sorties, and each sortie would include about 10 closed patterns (i.e., approaches to airfield followed by maneuver for another approach). The FTU scenario would add an additional 41,364 airfield operations per year, more than doubling the total number of operations at the airfield.

Night training would be regularly conducted by KC-46A aircrews. Approximately 20 percent of KC-46A operations would be conducted between 10:00 P.M. and 7:00 A.M. Currently, 26-percent of total operations at McConnell AFB are conducted at night.

Noise levels near McConnell AFB were calculated using NOISEMAP (Version 7.2) and include the location-specific effects of terrain and ground impedance. Details of the methods used to calculate noise levels and the population affected by elevated noise can be found in Volume II, Appendix B, Section B.1.3. Annoyance is a subjective response that is often triggered by interference of noise with activities. Individuals engaged in activities more easily disrupted by noise (e.g., conversation, sleeping, or watching television) are more likely to become annoyed than others. Although the reaction of an individual to noise depends on a wide variety of factors, social surveys have found a correlation between the time-averaged noise level as measured in DNL and the percentage of the affected population that is highly annoyed (see Volume II, Appendix C, Section C.1.3.1). It is widely accepted that 65 dB DNL is the noise level at which a substantial percentage of the population can be expected to be annoyed by noise, and this has been adopted by the USAF and several other Federal agencies as the level above which noise-sensitive land uses are not considered compatible (see Section 3.4.7 and Volume II, Appendix C, Section C.1.3.2).

Figure 4-5 depicts the noise contours associated with implementation of the KC-46A FTU scenario at McConnell AFB. The process used to calculate noise levels is described in more detail in Volume II, Appendix B, Section B.1.3. Noise levels are displayed graphically as DNL contours in 5 dB increments ranging from 65 dB to 85 dB. The number of off-base acres affected by noise levels greater than 65 dB DNL would increase from 724 to 997 acres (see Table 4-23). The estimated number of residents affected by this same level of noise would increase by 594 from 214 to 808 residents.

**Table 4-23. KC-46A FTU and MOB 1 Scenario Noise Impacts Relative to Baseline Noise at McConnell AFB**

Noise Level (dB DNL)	Baseline Conditions			FTU Scenario			MOB 1 Scenario		
	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres	Off-Base Population	Off-Base Acres	On-Base Acres
65–69	213	650	438	805	834	442	15	333	435
70–74	1	74	418	3	163	384	0	5	337
75–79	0	0	455	0	0	463	0	0	503
80–84	0	0	198	0	0	315	0	0	173
≥85	0	0	128	0	0	129	0	0	112
<b>Total</b>	<b>214</b>	<b>724</b>	<b>1,637</b>	<b>808</b>	<b>997</b>	<b>1,733</b>	<b>15</b>	<b>338</b>	<b>1,560</b>

Implementation of the KC-46A FTU scenario at McConnell AFB would not expose off-base areas to noise levels greater than 80 dB DNL. A total of 444 on-base acres located along the flightline would be affected by noise levels greater than 80 dB DNL. The number of structures on McConnell AFB exposed to noise levels greater than 80 dB DNL would increase from 46 to 48. None of the structures are occupied for residential purposes. Hearing loss risk among people working in high-noise environments on McConnell AFB would continue to be assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

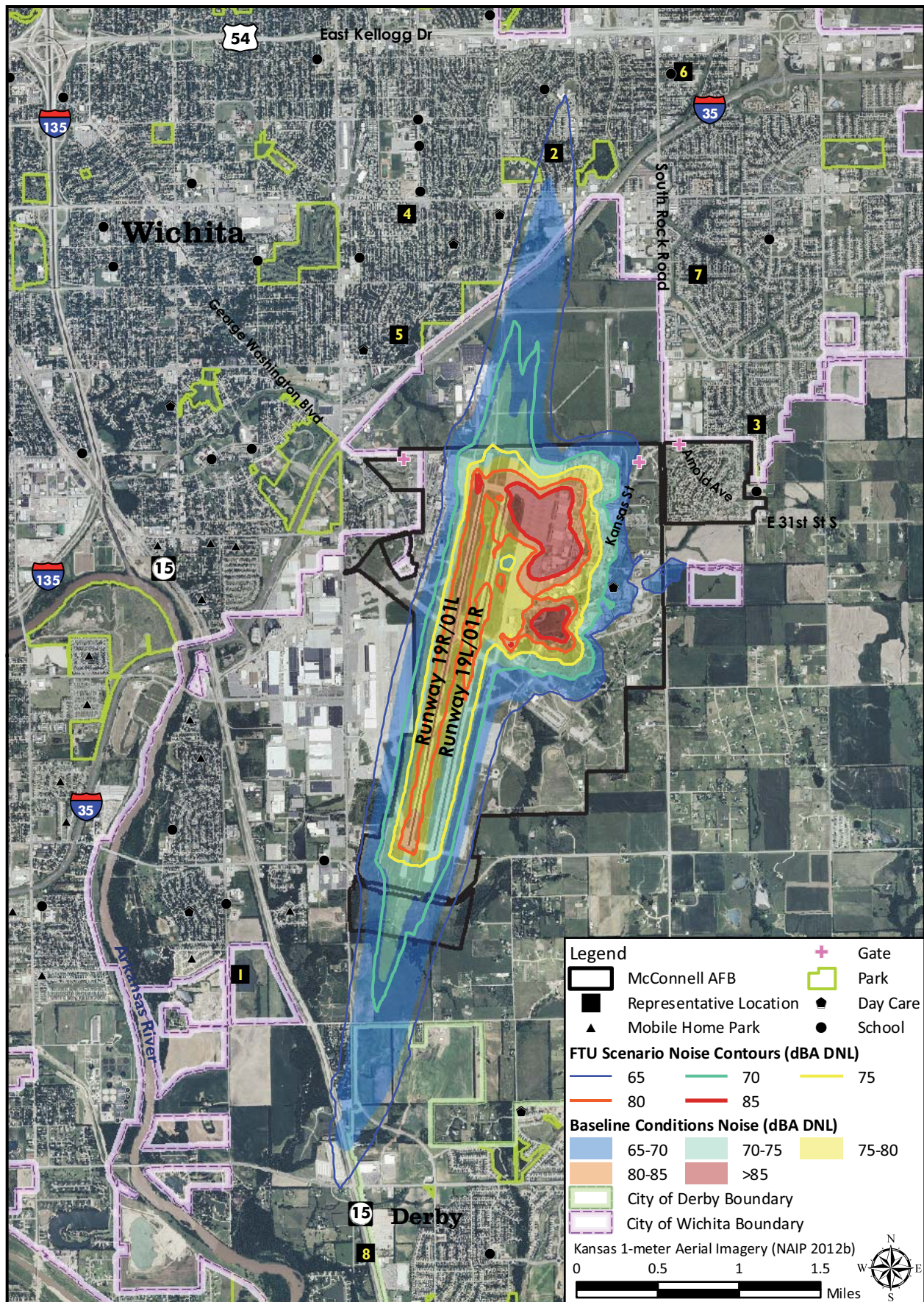


Figure 4-5. KC-46A FTU Scenario and Baseline Noise Contours at McConnell AFB

Table 4-24 presents noise conditions at several representative locations in the area surrounding McConnell AFB. These points, which are shown on Figure 4-5, do not denote a specific noise-sensitive receptor, but were instead established based on geographic center points of U.S. Census subdivisions. Noise levels at the representative locations under baseline conditions and the FTU and MOB 1 scenarios are listed in Table 4-24. The DNL at the 8 locations studied would increase between 1 and 2 dB under the FTU scenario. Increases in time-averaged noise levels near the base would be a result of increases in operations tempo instead of the aircraft being louder. For each location, a range of SELs is provided for the loudest five overflight types experienced at that location. Departures and closed patterns of transient aircraft (e.g., F-16C, T-38C) generate the highest SELs at the locations studied. A few KC-135 closed pattern operations and KC-46A departure and closed pattern operations were also part of the top five SEL noise contributors under the FTU scenario. Note that ground tracks and aircraft configuration vary from flight to flight based on winds and other factors, so flight procedures could be louder or quieter than the SEL values listed in this table. A more detailed description of the major noise-contributing operations at McConnell AFB can be found in Table C-1-4 in Volume II, Appendix C, Attachment C-1.

**Table 4-24. KC-46A FTU and MOB 1 Scenario Noise Levels at Representative Locations Near McConnell AFB**

Location ID	Baseline		FTU Scenario		MOB 1 Scenario	
	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>	DNL (dB)	Top 5 SELs (dB) <sup>a</sup>
1	52	83–94	53	83–94	50	83–94
2	65	95–108	66	95–108	60	93–108
3	54	82–95	55	86–95	53	83–95
4	52	81–95	53	81–95	50	81–95
5	55	85–96	56	85–96	53	85–96
6	53	85–98	55	85–98	50	83–98
7	52	82–101	54	84–101	50	83–101
8	61	91–102	62	91–102	57	91–102

<sup>a</sup> 'Top 5 SELs' refers to the range of loudest five event types experienced at the location (see Attachment C-1).

C&D activities in support of the proposed beddown would be conducted in the context of an active AFB where aircraft and other types of noise are a normal part of the environment. Although equipment would be muffled, construction activities unavoidably generate localized increases in noise qualitatively different from aircraft noise. For example, a typical backhoe, dozer, and crane generate up to approximately 78, 82, and 81 dB, respectively, at a distance of 50 feet (FHWA 2006). Construction noise would be minimized in accordance with local regulations and would be temporary and intermittent, lasting only the duration of the project. Furthermore, construction activities would be expected to take place during normal working hours (i.e., 7:00 A.M. to 5:00 P.M.). Some people living or working near the construction sites may notice and be annoyed by the noise, but noise impacts would not be substantial enough to be considered significant.

#### 4.4.1.1.2 Auxiliary Airfields

As part of the FTU scenario, aircrews operating the KC-46A would use three auxiliary airfields that are currently being used by KC-135 aircrews to provide variable training experiences. KC-46A aircraft would make use of established flying procedures while conducting operations at auxiliary airfields. These auxiliary airfields are described below. Auxiliary airfield operations would not be conducted after 10:00 P.M. or before 7:00 A.M.

**Clinton-Sherman Industrial Airpark (CSM), OK.** An estimated 977 KC-46A annual airfield operations would be conducted at CSM under the FTU scenario. The operations would take place in the context of 28,485 current annual airfield operations. A large percentage of ongoing operations at CSM are military aircraft that are as loud as or louder than the KC-46A. Based on the relatively low number of KC-46A operations proposed as part of the FTU scenario, noise levels near CSM would be expected to increase by less than 0.5 dB DNL (see Volume II, Appendix B, Section B.1.3.2, for supporting information). KC-46A aircrews would follow procedures used by other aircraft operating at CSM currently including avoidance of overflights of the town of Burns Flat. No substantive noise impacts would be expected to occur as a result of proposed KC-46A practice landings at CSM.

**Forbes Field (FOE), KS.** Approximately the same number of KC-46A auxiliary airfield operations conducted at CSM would also be conducted at Forbes Field. The 977 annual KC-46A airfield operations would be conducted in addition to the 24,742 current annual airfield operations. As was the case at CSM, a large percentage of operations at FOE are military aircraft that are as loud as or louder than the KC-46A. An ANG KC-135 unit is based at FOE. Based on the relatively low proposed number of KC-46A operations in the context of a large number of operations as loud or louder, noise levels near FOE would be expected to increase by less than 0.5 dB DNL (see Volume II, Appendix B, Section B.1.3.2, for supporting information). No substantive noise impacts would be expected to occur as a result of proposed KC-46A practice landings at FOE.

**Wichita Mid-Continent Airport (ICT), KS.** Wichita Mid-Continent Airport is expected to be used more frequently than the other two regularly used auxiliary airfields combined. KC-135 aircrews currently complete 35 or more operations per month at ICT. However, the 4,561 proposed KC-46A operations would occur in the context of 165,035 airfield operations being conducted annually under baseline conditions. Frequent users of ICT under baseline conditions include commercial and military aircraft types that are as loud as or louder than the KC-46A. In the context of ongoing operations, proposed KC-46A practice landings would be expected to increase noise levels by 0.5 dB DNL or less. No substantive noise impacts would be expected to occur as a result of proposed KC-46A practice landings at ICT.

#### *4.4.1.2 MOB 1 Scenario Noise Consequences*

KC-46A aircrews associated with the MOB 1 scenario would use the same flight procedures currently used by the KC-135 aircrews based at McConnell AFB. Tactical operations would make up 25 percent of takeoff and 40 percent of initial landing operations. Tactical operations, which involve operating at high altitudes except in the immediate vicinity of the airfield, generate less noise than standard operations at locations that are not immediately adjacent to the airfield. KC-46A aircrews associated with the MOB 1 scenario would fly approximately 33,710 operations per year versus the 24,521 annual operations currently being flown by the KC-135. The KC-46A would eventually replace the KC-135 aircraft, resulting in 47,807 projected annual airfield operations.

As part of the Reserve associate unit operations, the KC-46A would be flown on some weekend days. MOB 1 scenario training flights would be conducted 312 days per year. However, mission sorties, in which the aircraft is supporting real-world operations, could take place on any day of the year. Aircraft based at McConnell AFB are currently operated mostly on non-holiday weekdays, but training sorties do occur on weekends on an occasional basis. KC-46A aircrews would conduct about 10 percent of total airfield operations between 10:00 P.M. and 7:00 A.M.

Figure 4-6 depicts the noise contours associated with implementation of the KC-46A MOB 1 scenario at McConnell AFB. Noise contours in this figure include geographically isolated areas in

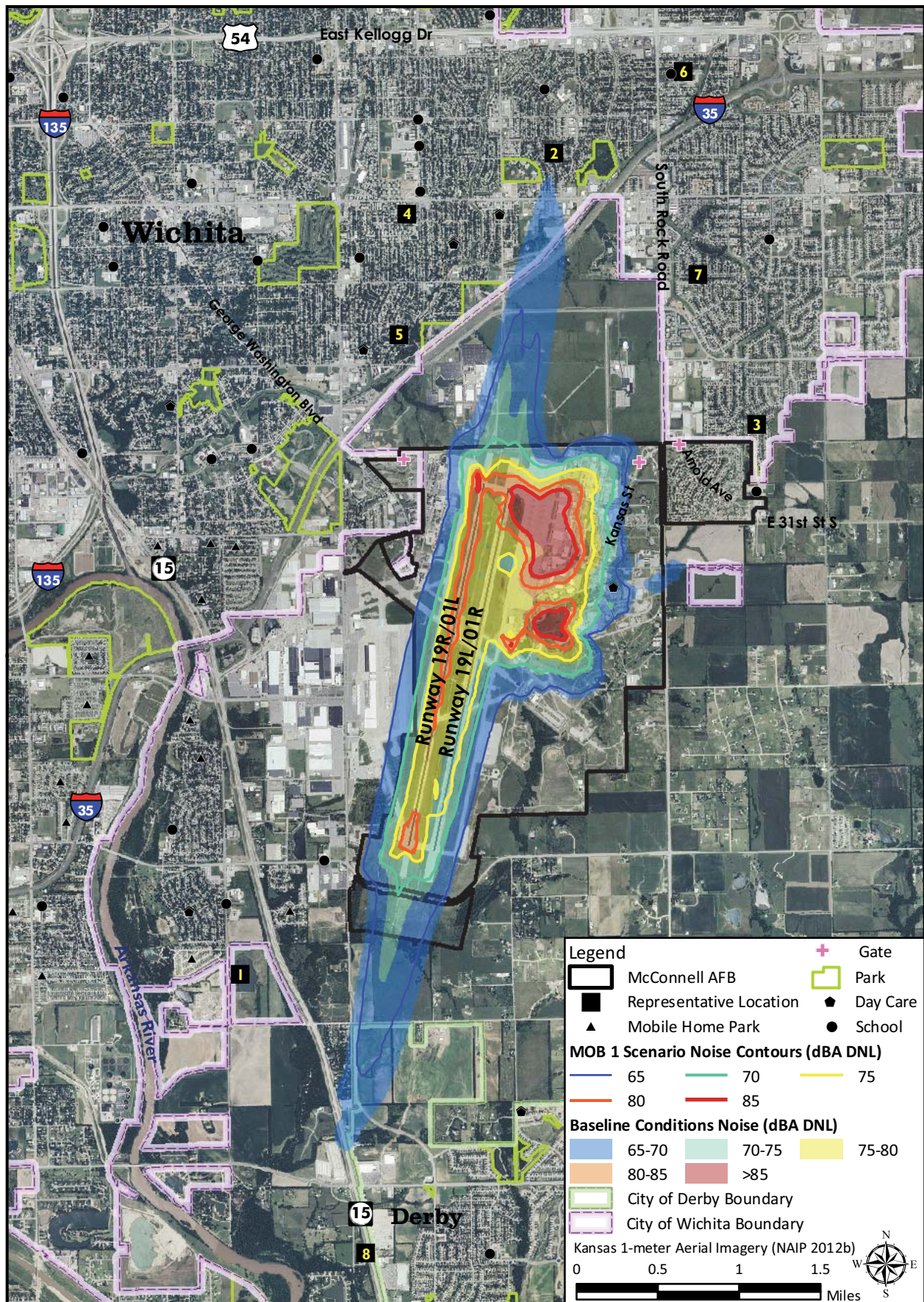


Figure 4-6. KC-46A MOB 1 Scenario and Baseline Noise Contours at McConnell AFB

which the noise level exceeds 65 dB DNL. In this case, the noise contour islands result from a crossing of representative flight paths used in the noise model. The total number of acres (on- and off-base) and the number of off-base residents affected by noise levels greater than 65 dB DNL would decrease under the MOB 1 scenario (see Table 4-23). Reduction in noise levels can be generally attributed to the replacement of the KC-135 with the slightly quieter KC-46A aircraft.

As described in Section 2.3.3, IOT&E operations would be conducted at the MOB 1 location. IOT&E operations would be expected to be indistinguishable to members of the public from standard MOB 1 flying operations and would taper off before the MOB 1 reaches full operations tempo such that annual operations listed counts for MOB 1 would not be exceeded.

Implementation of the KC-46A MOB 1 scenario at McConnell AFB would not expose off-base areas to noise levels greater than 80 dB DNL. On base, the number of acres affected by this same noise level would decrease from 326 to 285 acres. The area affected would be different from under baseline conditions, and the number of structures affected would decrease from 46 to 40. Hearing loss risk among people working in high-noise environments on McConnell AFB would continue to be assessed and managed in accordance with DoD, OSHA, and NIOSH regulations regarding occupational noise exposure.

Additional noise analysis was conducted at eight representative locations near McConnell AFB. The representative locations, which are depicted on Figure 4-6, were established based on central points of U.S. Census subdivisions and do not denote specific noise-sensitive locations. DNL values and the SEL generated by the loudest five types of overflights at these locations are listed in Table 4-24 for baseline conditions and the MOB 1 scenario. Changes in DNL would range from a decrease of 1 to 5 dB. The range of top five loudest event types would increase in some areas and decrease in others. Table C-1-4 in Volume II, Appendix C, Attachment C-1, provides details regarding the operations types generating the highest SELs at the locations studied.

C&D noise under the MOB 1 scenario would produce similar or higher impacts compared to the FTU scenario, as this scenario would require a larger amount of C&D activity. Due to the temporary and intermittent nature of C&D and its associated noise level, noise impacts would not be substantial enough to be considered significant.

#### **4.4.2 Air Quality**

The air quality analysis estimated the impact of emissions that would occur from proposed KC-46A construction and operational activities at McConnell AFB resulting from implementation of the FTU or MOB 1 scenarios. Volume II, Appendix D, Section D.4.1, of this Final EIS includes estimations of criteria pollutant emissions, HAPs, and GHGs from proposed sources at McConnell AFB.

The regions surrounding McConnell AFB and the auxiliary airfields proposed for use in the FTU and MOB 1 scenarios attain all of the NAAQS. Therefore, the analysis used the PSD threshold of 250 tons per year of a pollutant as an indicator of significance of projected air quality impacts within these regions.

**Construction** – The KC-46A scenarios proposed for McConnell AFB would require construction and/or renovation of airfield facilities, including training facilities, hangars, taxiways, and maintenance and fueling facilities. Air quality impacts resulting from the proposed construction activities would occur from (1) combustive emissions resulting from the use of fossil fuel-powered equipment and (2) fugitive dust emissions ( $PM_{10}/PM_{2.5}$ ) due to the operation of equipment on exposed soil. Construction activity data were developed to estimate proposed construction equipment usages and associated combustive and fugitive dust emissions for each project alternative.

Factors needed to derive construction source emission rates were obtained from the *Compilation of Air Pollutant Emission Factors*, AP-42, Volume I (USEPA 1995); the USEPA NONROAD2008a model for nonroad construction equipment (USEPA 2009a); and the USEPA MOVES2010b model for on-road vehicles (USEPA 2013b).

Inclusion of standard construction practices and LEED Silver certification into proposed construction activities would potentially reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by 50 percent from uncontrolled levels. Section 4.1.2 identifies these standard construction practices that would control fugitive dust.

**Operations** – Emissions associated with operation of the proposed FTU and MOB 1 scenarios at McConnell AFB would include (1) operations and engine maintenance/testing of aircraft, (2) onsite POVs and GMVs, (3) offsite POV commutes, (4) AGE, (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and other sources. Operational data used to calculate the projected KC-46A aircraft emissions were obtained from data used in the project noise analyses (see Section 4.4.1). Factors used to calculate combustive emissions for the KC-46A aircraft were based on emissions data developed by Pratt and Whitney for the PW4062 engine (ICAO 2013b). The operational times in mode for the KC-46A engine were based on those currently used for the KC-135 aircraft (Air Force Civil Engineer Center 2013).

Emissions from non-aircraft sources resulting from the proposed FTU and MOB 1 scenarios were estimated by multiplying existing emissions for these sources at McConnell AFB by the ratio of total employment populations associated with each proposed scenario and baseline conditions at McConnell AFB. The air quality analysis used CY 2012 to define existing emissions, as it included the most recent calendar year of operational activities at McConnell AFB (see Table 3-32). For comparative purposes, emissions resulting from proposed AGE supporting the KC-46A were based on AGE usages for existing KC-135 aircraft at McConnell AFB.

The analysis of proposed aircraft operations is limited to operations that occur within the lowest 3,000 feet of the atmosphere, as this is the typical depth of the atmospheric mixing layer where the release of aircraft emissions would affect ground-level pollutant concentrations. In general, aircraft emissions released above the mixing layer would not appreciably affect ground-level air quality.

#### *4.4.2.1 FTU Scenario Air Quality Consequences*

Table 4-25 presents estimates of emissions from construction activities that would result from implementation of the FTU scenario at McConnell AFB. These data show that, for each year of construction, total emissions would fall well below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions resulting from implementation of the FTU scenario would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the proposed operation of equipment on unpaved surfaces.

The air quality impact analysis of the FTU scenario at McConnell AFB is based on the net increase in emissions associated with the beddown of eight KC-46A aircraft. To produce a conservative analysis, it was assumed that all KC-46A aircraft associated with the FTU scenario would become operational at McConnell AFB in CY 2016.

**Table 4-25. Annual Construction Emissions Under the FTU Scenario at McConnell AFB**

Year/Construction Activity	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
<b>CY 2014</b>							
Demolish All Buildings	0.01	0.07	0.14	0.00	0.10	0.02	21
Total Building Development	0.93	4.83	10.09	0.28	6.06	1.36	1,361
Apron Fuels Hydrant Upgrade	0.03	0.14	0.29	0.01	0.18	0.04	39
Airfield/Runway Taxiway D/F Repairs	0.03	0.71	0.17	0.00	0.22	0.04	29
<b>Total CY 2014</b>	<b>1.00</b>	<b>5.75</b>	<b>10.69</b>	<b>0.29</b>	<b>6.56</b>	<b>1.45</b>	<b>1,451</b>
<b>CY 2016</b>							
Alpha Ramp Deicing Pad Expansions and Supporting Infrastructure	0.04	0.21	0.40	0.01	0.57	0.09	106
<b>Total CY 2016</b>	<b>0.04</b>	<b>0.21</b>	<b>0.40</b>	<b>0.01</b>	<b>0.57</b>	<b>0.09</b>	<b>106</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

Table 4-26 summarizes the annual emissions that would result from KC-46A FTU operations at McConnell AFB. These data show that the increase in emissions from the addition of eight KC-46A aircraft at McConnell AFB would not exceed 250 tons per year for VOCs, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, the FTU scenario would produce less than significant impacts to these pollutant levels. However, these data also show that the increase in NO<sub>x</sub> emissions from the proposed FTU scenario would exceed 250 tons per year. KC-46A aircraft operations and on-wing engine testing activities are the primary contributors to these emission increases.

Emissions of NO<sub>x</sub> that would result from implementation of the FTU scenario within Sedgwick County were compared to the most recent Sedgwick County emissions inventory (CY 2008) to determine the relative magnitude of proposed emissions and, therefore, their potential to combine with baseline emissions and contribute to an exceedance of an ambient air quality standard. The NO<sub>x</sub> emission increases that would result from implementation of the FTU scenario would amount to about 5 percent of the total NO<sub>x</sub> emissions generated by Sedgwick County in 2008 (see Table 3-31). The majority of emissions generated by the FTU scenario would occur from KC-46A aircraft operations up to an altitude of 3,000 feet AGL and across the several square miles that make up the McConnell AFB airspace and adjoining aircraft flight patterns. These emissions would be adequately mixed through this volume of atmosphere to the point that they would not result in substantial ground-level air quality impacts in any localized area. Given that the county attains the NO<sub>2</sub> NAAQS by a wide margin, these NO<sub>x</sub> emission increases would likely not have the potential to contribute to an exceedance of the NO<sub>2</sub> NAAQS.

As mentioned in section 3.4.2, air quality monitoring stations in the project region have recently recorded maximum O<sub>3</sub> levels that are slightly higher than the value of the national standard. The above analysis demonstrates that emissions from the proposed KC-46A aircraft operations would be diluted over a large volume of atmosphere across the McConnell AFB project region. These factors would dilute the impact of proposed NO<sub>x</sub> emissions within any localized area and to ambient O<sub>3</sub> levels. However, the increase in NO<sub>x</sub> emissions generated from operation of the FTU scenario would amount to approximately 5 percent annual increase and potentially a 4 ton per day,

or more, increase in NO<sub>x</sub> emitted within Sedgwick County as a whole. These NO<sub>x</sub> emissions would occur in an area that is in jeopardy of not continuing to attain the NAAQS for O<sub>3</sub>. Therefore, the increase in NO<sub>x</sub> (and VOC) emissions resulting from implementation of the FTU scenario, in combination with all other sources of those precursor emissions in Sedgwick County on a given day, could be substantial enough to contribute to an exceedance of the O<sub>3</sub> NAAQS in the region.

**Table 4-26. Annual Operations Emissions Under the FTU Scenario at McConnell AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	34.63	157.55	1,034.50	54.09	3.35	2.84	150,110
On-Wing Aircraft Engine Testing – KC-46A	14.14	48.41	23.62	1.88	0.17	0.15	5,226
Aerospace Ground Support Equipment – KC-46A	0.38	2.73	3.11	0.12	0.46	0.42	557
KC-135 Aircraft Operations	10.89	176.49	291.09	27.06	1.47	1.47	75,389
Transient Aircraft Operations	11.89	52.46	97.63	8.46	6.72	6.72	20,676
On-Wing Aircraft Engine Testing – KC-135	2.03	27.92	44.75	3.56	0.19	0.19	9,907
AGE – Existing Aircraft	1.17	8.41	9.56	0.37	1.41	1.29	1,710
GMVs/Nonroad Equipment	1.45	6.78	16.44	0.61	1.63	1.21	3,033
Privately Owned Vehicles – On Base	0.13	7.13	0.94	0.02	0.08	0.04	1,246
Privately Owned Vehicles – Off Base	0.74	34.60	6.10	0.10	0.73	0.37	6,406
Mobile Fuel Transfer Operations	0.13	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	<sup>a</sup>	9.08	13.62	0.31	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
<b>Total McConnell AFB Emissions – FTU Scenario</b>	<b>77.60</b>	<b>531.55</b>	<b>1,541.37</b>	<b>96.55</b>	<b>16.21</b>	<b>14.71</b>	<b>274,529</b>
<b>Existing McConnell AFB Emissions</b>	<b>40.79</b>	<b>335.90</b>	<b>493.25</b>	<b>40.43</b>	<b>12.89</b>	<b>11.63</b>	<b>117,551</b>
<b>McConnell AFB FTU Scenario Minus Existing Emissions</b>	<b>36.81</b>	<b>195.65</b>	<b>1,048.11</b>	<b>56.12</b>	<b>3.32</b>	<b>3.08</b>	<b>156,708</b>
<b>FTU Scenario Net Emissions Increase Fraction of Sedgwick County Emissions</b>	<b>0.001</b>	<b>0.002</b>	<b>0.05</b>	<b>0.06</b>	<b>0.00001</b>	<b>0.0004</b>	<b>0.05</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

#### 4.4.2.1.1 Auxiliary Airfields

Emissions from KC-46A FTU operations would occur within the immediate area of the auxiliary airfields and aircraft flight routes between these areas and McConnell AFB. Table 4-27 summarizes the annual emissions that would result from KC-46A operations proposed at each auxiliary airfield associated with the FTU scenario at McConnell AFB. These data show that the

increase in proposed emissions at CSM, FOE, and ICT would not exceed a PSD threshold. Therefore, KC-46A operations at each auxiliary airfield associated with the FTU scenario would produce less than significant air quality impacts.

**Table 4-27. Annual Emissions from KC-46A FTU Operations at Auxiliary Airfields Near McConnell AFB, CY 2016**

Auxiliary Airfield	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
Clinton Sherman Industrial Airpark (CSM)	0.12	1.45	25.97	1.32	0.08	0.07	3,671
Forbes Field (FOE)	0.12	1.45	25.97	1.32	0.08	0.07	3,671
Wichita Mid-Continent Airport (ICT)	0.54	6.76	121.25	6.15	0.36	0.30	17,138
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

#### 4.4.2.2 MOB 1 Scenario Air Quality Consequences

Table 4-28 presents estimates of emissions from construction activities that would result from implementation of the MOB 1 scenario at McConnell AFB. These data show that, for each year of construction, total emissions would fall well below the PSD thresholds used to indicate significance or insignificance. Therefore, temporary construction emissions from the proposed MOB 1 scenario would produce less than significant air quality impacts. The main sources of PM<sub>10</sub>/PM<sub>2.5</sub> emissions would be fugitive dust from the operation of equipment on unpaved surfaces.

**Table 4-28. Annual Construction Emissions Under the MOB 1 Scenario at McConnell AFB**

Year	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
CY 2014	1.31	6.87	14.12	0.39	8.56	1.91	1,915
CY 2015	0.97	5.52	10.33	0.29	3.46	1.16	1,485
CY 2016	0.05	0.28	0.55	0.02	0.60	0.10	129
CY 2017	0.00	0.06	0.01	0.00	0.00	0.00	2
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

Key: CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

The air quality impact analysis of the MOB 1 scenario at McConnell AFB is based on the net change in emissions that would result from the replacement of existing KC-135 operations with operations from the beddown of 36 KC-46A aircraft. To produce a conservative analysis, it was assumed that all 36 KC-46A aircraft associated with the MOB 1 scenario would become operational at McConnell AFB in CY 2016.

Table 4-29 summarizes the annual emissions that would result from implementation of the MOB 1 scenario at McConnell AFB. The data in Table 4-29 show that the net increase in emissions from the replacement of existing KC-135 aircraft operations with operations from 36 KC-46A aircraft would not exceed 250 tons per year for VOCs, CO, SO<sub>x</sub>, PM<sub>10</sub>, or PM<sub>2.5</sub>. Therefore, implementation of the MOB 1 scenario would produce less than significant impacts on these pollutant levels. However, these data also show that the increase in NO<sub>x</sub> emissions from the MOB 1 scenario would exceed 250 tons per year. KC-46A aircraft operations and on-wing

engine testing activities are the primary contributors to these emission increases. The NO<sub>x</sub> emission increases that would result from implementation of the MOB 1 scenario would amount to about 3 percent of the total NO<sub>x</sub> emissions generated by Sedgwick County in 2008 (see Table 3-31).

**Table 4-29. Annual Operations Emissions Under the MOB 1 Scenario at McConnell AFB, CY 2016**

Activity Type	Air Pollutant Emissions (tons per year)						
	VOCs	CO	NO <sub>x</sub>	SO <sub>x</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2e</sub> (mt)
KC-46A Aircraft Operations	50.07	201.73	837.56	45.42	2.92	2.49	125,647
On-Wing Aircraft Engine Testing – KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,286
Aerospace Ground Support Equipment – KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	858
Transient Aircraft	11.89	52.46	97.63	8.46	6.72	6.72	20,676
Aerospace Ground Support Equipment – Existing Aircraft	0.59	4.25	4.84	0.19	0.71	0.65	865
GMVs/Nonroad Equipment	1.09	5.08	12.32	0.45	1.22	0.91	2,271
Privately Owned Vehicles – On Base	0.10	5.34	0.70	0.02	0.06	0.03	933
Privately Owned Vehicles – Off Base	0.56	25.92	4.57	0.07	0.55	0.28	4,798
Mobile Fuel Transfer Operations	0.10	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
Point and Area Sources	<sup>a</sup>	6.80	10.20	0.23	<sup>a</sup>	<sup>a</sup>	<sup>a</sup>
<b>Total McConnell AFB – MOB 1 Scenario</b>	<b>79.37</b>	<b>355.33</b>	<b>1,001.56</b>	<b>57.36</b>	<b>13.09</b>	<b>11.91</b>	<b>162,334</b>
<b>Existing McConnell AFB Emissions</b>	<b>40.79</b>	<b>335.90</b>	<b>493.25</b>	<b>40.43</b>	<b>12.89</b>	<b>11.63</b>	<b>117,551</b>
<b>McConnell AFB MOB 1 Scenario Minus Existing Emissions</b>	<b>38.58</b>	<b>19.44</b>	<b>508.31</b>	<b>16.93</b>	<b>0.20</b>	<b>0.29</b>	<b>44,783</b>
<b>MOB 1 Scenario Net Emissions Increase Fraction of Sedgwick County Emissions</b>	<b>0.001</b>	<b>0.0001</b>	<b>0.02</b>	<b>0.02</b>	<b>0.000001</b>	<b>0.00001</b>	<b>0.01</b>
<b>PSD Threshold</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>N/A</b>

<sup>a</sup> Source does not emit particular pollutant.

**Key:** CO<sub>2e</sub> (mt) – carbon dioxide equivalent in metric tons

Similar to what is described above for the proposed FTU scenario, NO<sub>x</sub> emission increases from the MOB 1 scenario would likely not have the potential to contribute to an exceedance of the NO<sub>2</sub> NAAQS.

The NO<sub>x</sub> emissions from implementation of the MOB 1 scenario would occur in an area that is in jeopardy of not continuing to attain the NAAQS for O<sub>3</sub>. These emissions would represent a 2 percent annual increase and a potential 2 ton, or more, daily increase in NO<sub>x</sub> emissions in the region. Therefore, the increase in NO<sub>x</sub> (and VOC) emissions resulting from implementation of

the MOB 1 scenario, in combination with all other sources of those precursor emissions in Sedgwick County on a given day, could be substantial enough to contribute to an exceedance of the O<sub>3</sub> NAAQS in the region.

Early in its planning, the USAF reconsidered its operational assumptions and projections to avoid or reduce potential impacts to the extent feasible. This resulted in the development of alternatives that reduced the emissions of criteria pollutants to the extent feasible by reducing the number of near-field operations, such as landing and take-off operations. At this time, the USAF is not aware of any other feasible mitigations that could be applied to further reduce the emissions impact from KC-46A aircraft operations and on-wing engine testing activities.

Proposed operations under the FTU and MOB 1 scenarios at McConnell AFB would emit HAPs that could potentially impact public health. Proposed KC-46A aircraft operations and on-wing engine testing activities would generate the majority of HAPs from these scenarios. As discussed above for proposed criteria pollutant impacts, since proposed KC-46A operations would occur intermittently over a volume of atmosphere, they would produce minimal ambient impacts of HAPs in a localized area.

In addition to presenting estimates of GHG emissions that would result from the KC-46A scenarios at McConnell AFB, the following considers how climate change may impact the KC-46A beddown scenarios at McConnell AFB. For McConnell AFB, the projected climate change impact of concern is increased aridity, as documented in *Global Climate Change Impacts in the United States* (USGCRP 2009). This report predicts that in the future, the Great Plains region surrounding McConnell AFB will experience warmer temperatures and decreasing precipitation. These conditions will produce not only more frequent extreme events such as heat waves, droughts, scarcities of water supplies, but also heavy rainfall. While operations at McConnell AFB have already adapted to droughts, high temperatures, and scarce water supplies, exacerbation of these conditions in the future may increase the cost of proposed operations at McConnell AFB and could impede operations during extreme events. Additional measures could be needed to mitigate such impacts.

#### **4.4.3 Safety**

This section addresses the potential environmental consequences to flight and ground safety that could occur at or in the vicinity of McConnell AFB with implementation of either the KC-46A FTU or MOB 1 scenario. The addition of up to eight aircraft associated with the FTU scenario would cause an increase in airfield operations and could increase both flight and ground safety risk.

Replacement of the existing 44 PAA KC-135 mission with the new 36 PAA KC-46A MOB 1 scenario would be expected to result in similar flight and ground safety consequences.

##### *4.4.3.1 FTU Scenario Safety Consequences*

The FTU scenario would be a new mission at McConnell AFB, resulting in additional new aircraft operations, which could increase safety consequences.

##### **4.4.3.1.1 Flight Safety**

**Aircraft Mishaps** – Although there would be an increase in operations with the addition of the FTU scenario, KC-46A aircraft would utilize the existing flight patterns and AR tracks as those used by the KC-135 mission. As discussed previously, the accident rate for the KC-46A is expected to be similar to that of the commercial airframe upon which it is based. Using the

accident rate of 0.36 per flight cycle, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low (less than one every 100 years; see Volume II, Appendix B, Section B.3.3.1).

Therefore, implementation of the KC-46A FTU scenario at McConnell AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps.

**Bird/Wildlife-Aircraft Strike Hazard** – The addition of eight aircraft could slightly increase the risk of aircraft accidents due to bird/wildlife-aircraft strikes. Ongoing elements of the McConnell AFB BASH Plan would continue.

Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a tool for analysis and correlation of bird habitat, migration, and breeding characteristics with key environmental and manmade geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings, which take place prior to any sortie.

With proposed KC-46A flight operations similar to those being conducted by KC-135 aircraft at McConnell AFB, the overall potential for bird/wildlife-aircraft strikes is not anticipated to be significantly greater than current levels. All safety actions in place for existing KC-135 operations would continue to be in place for the KC-46A aircraft. McConnell AFB personnel have developed aggressive procedures designed to minimize the occurrence of bird/wildlife-aircraft strikes, and have documented detailed procedures to monitor and react to heightened risk of bird strikes. When bird/wildlife-aircraft strike hazard risks increase, limits are placed on low-altitude flight and some types of training (e.g., multiple approaches, closed-pattern pattern work) in the airport and airspace environments. Special briefings are provided to pilots whenever the potential for bird strikes is high within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.

#### 4.4.3.1.2 Ground Safety

There are no aspects of the KC-46A FTU scenario at McConnell AFB that are expected to create new or unique ground safety issues not already addressed by current policies and procedures. Operations and maintenance procedures, as they relate to ground safety, are conducted by base personnel and would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and AFOSH standards.

No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A FTU scenario at McConnell AFB. All renovation and construction activities would comply with all applicable OSHA regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable AFOSH and OSHA requirements are implemented.

The KC-46A would be operated in an airfield environment similar to the current operational environment. Since the KC-46A is a new airframe and would require response actions specific to the aircraft, the emergency and mishap response plans would be updated to include procedures and response actions necessary to address a mishap involving the KC-46A and associated

equipment. With this update, the McConnell AFB airfield safety conditions would be similar to baseline conditions. Therefore, no significant impact would occur from aircraft mishaps or mishap response.

As stated previously in Section 3.4.7, incompatible development exists within APZ I and APZ II. Additionally, the land directly south and east of McConnell AFB is identified as a future growth area for the Cities of Wichita and Derby. Coordination between McConnell AFB and the localities, and consideration of AICUZ guidelines, would minimize the impact of future development on the mission of McConnell AFB. See Volume II, Appendix B, Figure B-1, for the typical generic CZ and APZ dimensions.

#### *4.4.3.2 MOB 1 Scenario Safety Consequences*

The MOB 1 scenario would replace the existing KC-135 mission with fewer aircraft, although annual airfield operations would be higher.

##### *4.4.3.2.1 Flight Safety*

**Aircraft Mishaps** – Although there would be an increase in operations with replacement of the KC-135 mission, KC-46A aircraft would utilize the same flight patterns and AR tracks as those used by the KC-135 mission.

As discussed previously, the accident rate for the KC-46A is expected to be similar to that of the commercial airframe upon which it is based. Using the accident rate of 0.36 per flight cycle, it is projected that the probability of a KC-46A accident in the vicinity of the airfield would be low (less than one every 100 years; see Volume II, Appendix B, Section B.3.3.1).

Therefore, implementation of the KC-46A MOB 1 scenario at McConnell AFB is not anticipated to result in any net increase in the safety risks associated with aircraft mishaps or any increase in the risks of occurrence of those mishaps.

**Bird/Wildlife-Aircraft Strike Hazard** – Because the KC-46A MOB 1 mission would replace the current tanker mission, the same risk of aircraft accidents due to bird/wildlife strikes that are currently occurring would be expected to continue with implementation of the MOB 1 scenario. In addition, ongoing elements of the McConnell AFB BASH Plan would continue.

Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a tool for analysis and correlation of bird habitat, migration, and breeding characteristics with key environmental and manmade geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings, which take place prior to any sortie.

With KC-46A flight operations similar to those being conducted by KC-135 aircraft at McConnell AFB, the overall potential for bird/wildlife-aircraft strikes is not anticipated to be significantly greater than current levels. All safety actions in place for existing KC-135 operations would continue to be in place for the KC-46A aircraft. McConnell AFB personnel have developed aggressive procedures designed to minimize the occurrence of bird/wildlife-aircraft strikes, and have documented detailed procedures to monitor and react to heightened risk of bird strikes. When bird/wildlife-aircraft strike hazard risks increase, limits are placed on low-altitude flight and some types of training (e.g., multiple approaches, closed-pattern pattern work) in the airport and airspace environments. Special briefings are provided to pilots whenever the

potential for bird strikes is high within the airspace. KC-46A pilots would be subject to these procedures. Therefore, no significant impact would occur related to bird/wildlife-aircraft strike hazard issues.

#### 4.4.3.2.2 Ground Safety

There are no aspects of the KC-46A MOB 1 scenario at McConnell AFB that are expected to create new or unique ground safety issues not already addressed by current policies and procedures. Operations and maintenance procedures, as they relate to ground safety, are conducted by base personnel and would not change from current conditions. All activities would continue to be conducted in accordance with applicable regulations, technical orders, and AFOSH standards.

No unique construction practices or materials would be required as part of any of the renovation, addition, or construction projects associated with the KC-46A MOB 1 scenario at McConnell AFB. All renovation and construction activities would comply with all applicable OSHA regulations to protect workers. In addition, the newly constructed buildings would be built in compliance with antiterrorism/force protection requirements. The USAF does not anticipate any significant safety impacts as a result of construction, demolition, or renovation if all applicable AFOSH and OSHA requirements are implemented.

The KC-46A would be operated in an airfield environment similar to the current operational environment. Since the KC-46A is a new airframe and would require response actions specific to the aircraft, the emergency and mishap response plans would be updated to include procedures and response actions necessary to address a mishap involving the KC-46A and associated equipment. With this update, the McConnell AFB airfield safety conditions would be similar to baseline conditions. Therefore, no significant impact would occur from aircraft mishaps or mishap response.

As stated previously in Section 3.4.7, incompatible development exists within APZ I and APZ II. Additionally, the land directly south and east of McConnell AFB is identified as a future growth area for the Cities of Wichita and Derby. Coordination between McConnell AFB and the localities, and consideration of AICUZ guidelines, would minimize the impact of future development on the mission of McConnell AFB.

### 4.4.4 Soils and Water

#### 4.4.4.1 *FTU Scenario Soils and Water Consequences*

All of the C&D activities associated with the proposed KC-46A FTU scenario would occur within the McConnell AFB boundary. The majority of this work would occur on previously disturbed areas. As shown in Table 2-15, the total disturbed area for the projects associated with the FTU scenario would not exceed 7 acres (the area for new construction and additions/alterations).

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

Improvements to the deicing containment system would occur as part of the proposed action. Improvements would include an expansion of two deicing pads to accommodate the wider

wingspan of the KC-46A, replacement of the existing underground holding tank with tanks sized appropriately to the expanded deicing pads, and replacement of various components of the deicing system (valves, piping, wet well, pump, etc.). The third existing deicing pad, along with the existing holding tank, would be decommissioned in place.

The NPDES permit includes provisions for deicing activities within Drainage Area 1-19, and the renewed permit would include a brief description of the new deicing holding tanks. The permit requires monitoring of biological oxygen demand (BOD) levels in drainages where deicing occurs. Past monitoring results in Drainage Area 1-19 have shown permit exceedances of BOD in the stormwater outfall. These exceedances have been reported to the Kansas Department of Health and Environment (KDHE). While the exact cause of the elevated BOD is not known, it is likely related to some deicing fluid entering the stormwater outfall. The deicing fluid used at McConnell AFB consists of a propylene glycol solution. Propylene glycol degrades in aquatic habitats such as streams and rivers. As propylene glycol degrades, oxygen in the aquatic habitat is used up and becomes unavailable to aquatic life. McConnell AFB, in coordination with the KDHE, will continue to implement the best management practices described in Section 3.4.4.4.2.1 to reduce the potential for deicing fluids to enter surface waters at this outfall.

Improvements to the current deicing system will be designed to increase the operational efficiency of the deicing process and minimize the amount of deicing fluid entering Drainage Area 1-19. Although the deicing system improvements will be designed to minimize deicing fluid entering the outfall, the extent to which the improvements will improve BOD levels in the outfall is not known at this time. Monitoring and active management would continue with the implementation of the FTU scenario.

The increase in flying operations resulting from the KC-46A FTU scenario at McConnell AFB has the potential to increase the use of deicing fluids and thereby increase the amount of deicing fluid in stormwater runoff. This increase is anticipated to be minor, as the number of aircraft operations has less of an influence on the amount of stormwater runoff entering the deicing system than the amount of precipitation potentially occurring at the time of deicing. McConnell AFB has coordinated with the KDHE regarding the proposed deicing project and it is not anticipated that this project would change the requirements of the existing NPDES permit. The permit covers industrial activities in Drainage Area 1-19, including deicing. Since the nature of the activity (aircraft deicing) is not changing, a change to the permit is not required. Coordination will continue with the KDHE during the design phase of the project. McConnell AFB has also coordinated with the City of Wichita wastewater treatment plant on discharges from the proposed deicing system.

For the reasons described above, the potentially minor increase in deicing fluid contained in stormwater runoff resulting from the increase in aircraft operations would be a minor adverse impact should that runoff be conveyed to Outfall 19. The improvements to the deicing system are anticipated to result in less deicing fluid entering the stormwater runoff. Therefore, the expansion of the deicing pads in stormwater Drainage Area 1-19 has the potential for both minor adverse and beneficial impacts to the quality of stormwater runoff in this drainage area.

The McConnell AFB SWPPP for industrial facilities identifies control practices to be followed for spill prevention and response, routine inspection of discharges at sites, and proper training of employees. The SWPPP would be updated to reflect the land disturbance associated with the proposed KC-46A development projects.

Additionally, an approved Erosion and Sediment Control Plan would be followed during construction, and standard construction practices, in accordance with the CWA, would be

implemented to retain run-off and promote recharge of groundwater. No mitigation measures would be required because no significant impacts are anticipated to result from the development associated with the FTU scenario. No sensitive groundwater resources or surface water resources would be impacted within the project areas of the FTU beddown.

#### *4.4.4.2 MOB 1 Scenario Soils and Water Consequences*

All of the C&D activities associated with the proposed KC-46A MOB 1 scenario would occur within the McConnell AFB boundary. The majority of this work would occur on previously disturbed areas. As depicted in Table 2-18, the total disturbed area for projects associated with the MOB 1 scenario at McConnell AFB would not exceed 12 acres.

For any projects that result in soil disturbance, the USAF would ensure that all construction activities are conducted in accordance with the applicable stormwater discharge permit to control erosion and prevent sediment, debris, or other pollutants from entering the stormwater system. The USAF would specify compliance with the stormwater discharge permit in the contractor construction requirements.

Construction of the deicing pads in the stormwater Drainage Area 1-19 has the potential for both minor adverse impacts and beneficial impacts to stormwater runoff in the drainage area. These impacts would be the same as those described for the FTU scenario. However, due to a smaller increase in aircraft operations for the MOB 1 scenario, impacts associated with the MOB 1 scenario could be less than those described for the FTU scenario.

The McConnell AFB SWPPP for industrial facilities identifies control practices to be followed for spill prevention and response, routine inspection of discharges at sites, and proper training of employees. The SWPPP would be updated to reflect the land disturbance associated with the proposed KC-46A development projects.

The proposed addition to Building 1220 is for the storage of mobility bags. These bags are loaded upon aircraft during troop deployments and therefore the storage of these bags must be in close proximity to the mobility ramp. Factors considered when siting the mobility bag storage area included environmental opportunities/constraints (e.g., noise, floodplain, land use compatibility, threatened and endangered species, historic preservation, cultural resources, and airfield surfaces). Facility requirements and utility availability; Anti-Terrorism/Force Protection (AT/FP) criteria; and the functional relationship to other facilities for energy savings potential, parking, size/massing, and aesthetics were also considered. Building 1220, which serves as the existing mobility bag storage, was the only facility considered suitable to partially meet this storage requirement. This facility would require an 8,000-square-foot addition to accommodate the KC-46A MOB 1 scenario. The proposed location for this addition would be in a 100-year floodplain. The USAF did consider an alternate location on the west side of Building 1220 in an area outside of the floodplain. However, construction on this side of Building 1220 would impact a main utility trunk line serving the control tower and the entire Kansas Air National Guard (KANG) complex located on the opposite side of the flightline from Building 1220. The trunk line contains approximately 400 pairs of copper cabling and over 200 fiber optic strands. Construction is not possible over the top of the trunk line, would cost over \$1 million to relocate, and is prohibitive. To the maximum extent practical, land disturbance in floodplains has been avoided and although the addition would avoid stream impacts, a Finding of No Practicable Alternative (FONPA) would be required should McConnell AFB be selected for the MOB 1 scenario. The FONPA would be prepared in accordance with 32 CFR 989 and Executive Order (EO) 11988, *Floodplain Management*.

To minimize potential impacts, construction would follow guidelines for construction in the floodplain, including elevating structures above the base flood level; placing sensitive equipment on upper levels of facilities; constructing sidewalks, roads, and parking lots with pervious materials; and creating new stormwater retention areas for projects that create net impervious surface areas, to the maximum practicable extent. McConnell Creek is a jurisdictional stream and the project would be outside the jurisdictional boundaries of the stream.

All of the development locations, including those near water resources, would be re-graded after construction to pre-construction contours. Although short-term, minor effects on water resources could result from work in the floodplain of McConnell Creek, long-term, minor, adverse effects on water resources at McConnell AFB are not anticipated to result from implementation of the KC-46A MOB 1 scenario.

#### **4.4.5 Biological Resources**

##### *4.4.5.1 FTU Scenario Biological Resources Consequences*

###### **4.4.5.1.1 Vegetation**

The FTU scenario at McConnell AFB would have similar potential impacts on vegetation as described for the FTU scenario at Altus AFB. All of the projects would occur in currently developed or disturbed areas that provide little habitat value and would result in no significant impacts on vegetation.

###### **4.4.5.1.2 Wildlife**

Potential impacts on wildlife would also be similar to those described previously for the other alternative bases. Some individual animals could be subject to displacement or mortality due to construction activities and new structure siting. However, the affected areas likely do not function as important habitat for wildlife on the base or surrounding vicinity, and the number of individuals affected would be small relative to total population numbers in the region. As described for the other alternative bases, noise produced by construction, renovation, and demolition activities would result in no significant impacts on wildlife populations.

Although the KC-46A is quieter than the KC-135, the number of annual airfield operations would increase, resulting in slight noise increases on and near McConnell AFB and the associated auxiliary airfields. Potential effects on wildlife would be similar to those described for the other alternative bases. However, only modest increases in DNL noise contours would result from the FTU beddown.

With the exception of the proposed deicing pad expansion, overall effects on wildlife would be similar to those described for the other alternative bases. Minor adverse and minor beneficial impacts to aquatic life could occur as a result of expanded deicing activities in Drainage Area 1-19 (see Section 4.4.4.1). Adverse impacts, should they occur, are anticipated to be minor and short term, and no significant wildlife impacts are anticipated to result from implementation of the KC-46A FTU scenario at McConnell AFB.

###### **4.4.5.1.3 Special-Status Species**

Because no special-status species and/or designated critical habitat occur at McConnell AFB, no significant impacts on special-status species are anticipated to result from the FTU scenario at McConnell AFB.

#### 4.4.5.1.4 Wetlands

No known wetlands are present in any of the areas proposed for development under the FTU scenario; therefore, impacts on wetlands are not anticipated.

#### 4.4.5.2 *MOB 1 Scenario Biological Resources Consequences*

##### 4.4.5.2.1 Vegetation

The proposed MOB 1 scenario at McConnell AFB would have similar potential impacts on vegetation as described for the MOB 1 scenario at Altus AFB. All of the projects would occur in currently developed or disturbed areas that provide little habitat value and would result in no significant impacts on vegetation.

##### 4.4.5.2.2 Wildlife

Potential wildlife impact categories would be the same as those described for the other alternative bases. Some individuals could be subject to displacement or mortality due to construction activities and new structure siting. However, the affected areas likely do not function as important habitat for wildlife on the base or surrounding vicinity, and the number of individuals affected would be small relative to total population numbers in the region. As described for the other alternative bases, noise produced by construction, renovation, and demolition activities would result in no significant impacts on wildlife populations.

Airfield operations would increase slightly, resulting in slight noise increases on and near the base. Potential noise-related effects on wildlife would be similar to those described for the other alternative bases. Because the KC-46A is quieter than the KC-135, only modest noise increases are anticipated, and there would not be a substantial increase in wildlife habitat exposed to increased noise levels. Much of the area subject to increased noise levels consists of developed or residential land use.

Increased operations would increase the potential for aircraft to strike birds and other wildlife in the air and on the runway. However, continued adherence to the base's BASH Plan would minimize the risk.

With the exception of the proposed deicing pad expansion, overall impacts on wildlife would be similar to those described for the other alternative bases. Minor adverse and minor beneficial impacts to aquatic life could occur as a result of expanded deicing activities in Drainage Area 1-19 (see Sections 4.4.4.1 and 4.4.4.2). Adverse impacts, should they occur, are anticipated to be minor and short term, and no significant wildlife impacts are anticipated to result from implementation of the KC-46A MOB 1 scenario at McConnell AFB.

##### 4.4.5.2.3 Special-Status Species

Because no special-status species and/or designated critical habitat occur at McConnell AFB, no significant impacts on special-status species are anticipated to result from implementation of the MOB 1 scenario at McConnell AFB.

##### 4.4.5.2.4 Wetlands

No known wetlands are present in any of the areas proposed for development under the MOB 1 scenario; therefore, impacts on wetlands are not anticipated.

#### **4.4.6 Cultural Resources**

##### *4.4.6.1 FTU Scenario Cultural Resources Consequences*

None of the buildings proposed to support the FTU scenario at McConnell AFB are considered eligible for listing on the NRHP (see Volume II, Appendix A, Section A.5.4). No impacts on archaeological historic properties are anticipated to result from implementation of the FTU scenario. The Kansas SHPO has concurred with the USAF's finding (letter from SHPO to USAF dated 18 June 2013; see Volume II, Appendix A, Section A.5.4.2). Ground-disturbing activities would occur in previously disturbed contexts. Those areas not already beneath previously modified surfaces have been surveyed for the presence of archaeological resources; no NRHP-eligible archaeological sites have been found, and it is extremely unlikely that such historic properties would be located in the course of this proposed action. It is also extremely unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, addition, or construction. It is still possible that archaeological resources could be buried on McConnell AFB (McConnell AFB 2004b). In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the NHPA, as specified in standard operating procedures described in the ICRMP (McConnell AFB 2004b). Such mitigation could take the form of additional documentation or other actions agreed to by the USAF and SHPO.

Indirect impacts on cultural resources from population increase or visual intrusions are extremely unlikely. Under the FTU scenario, the population would increase by a very small amount, especially in light of the existing population at the base and in Wichita. New construction would occur in the context of an active Air Force Base, where changes in the infrastructure are common and are not considered to be an impact. There is no historic district, nor would the viewshed of any historic properties be affected by the proposed construction.

No construction or change in airspace use is associated with use of auxiliary airfields for the KC-46A FTU scenario. There would be no impact on cultural resources at CSM, ICT, or FOE.

No adverse Section 106 impacts to tribal resources are anticipated. The USAF initiated consultation with 12 tribes. Responses were received from seven tribes indicating no issues of concern, as well as one request for a copy of the Draft EIS. Additional efforts were made to contact the remaining five non-responsive tribes by e-mail and telephone without success (see Table A-1 in Volume II, Appendix A, Section A.3). While the USAF values its relationship with all tribes and will continue to consult on other planning efforts or matters of known or potential interest to tribes, Section 106 consultation on the KC-46A FTU beddown proposed alternative at McConnell AFB is now complete.

##### *4.4.6.2 MOB 1 Scenario Cultural Resources Consequences*

Actions associated with the proposed KC-46A MOB 1 scenario at McConnell AFB would include the demolition of facilities; renovation of 11 buildings; replacement of a section of tarmac (runway, two taxiways and an apron); and additions/alterations to four facilities, including trainers and a fuels hydrant on an apron. McConnell AFB has determined that three buildings associated with the MOB 1 scenario are eligible for listing on the NRHP: Buildings 1106, 1107, and 1218. Demolition of Building 1106 would be an adverse effect, while renovations to Buildings 1107 and 1218 would be effects, but not adverse effects. McConnell AFB has also determined that the remaining buildings and structures associated with the MOB 1 scenario are not eligible for listing on the NRHP. The Kansas SHPO has concurred with all of these findings. McConnell AFB and the Kansas SHPO have signed a MOA agreeing

to measures that mitigate the adverse effect on historic properties that would result from implementation of the MOB 1 scenario at McConnell AFB (see Volume II, Appendix A, Section A.5.4.9).

Ground-disturbing activities would occur in previously disturbed contexts. Those areas not already beneath previously modified surfaces have been surveyed for the presence of archaeological resources; none has been located. It is extremely unlikely that any previously undocumented archaeological resources would be encountered during facility demolition, renovation, addition, or construction. It is still possible that archaeological resources could be buried on McConnell AFB (McConnell AFB 2004b). In the case of unanticipated or inadvertent discoveries, the USAF would comply with Section 106 of the NHPA, as specified in standard operating procedures described in the ICRMP (McConnell AFB 2004b).

Indirect effects on cultural resources from population increase or visual intrusions are extremely unlikely. Under the MOB 1 scenario, the population would increase by a very small amount. New construction would occur in the context of an active Air Force Base, where changes in the infrastructure are common and are not considered to be an impact. There is no historic district, nor would the viewshed of any historic properties be affected by the proposed construction.

McConnell AFB consulted with the same tribes as described in the FTU scenario. No adverse Section 106 impacts to any tribal resources are anticipated. Tribal responses for the MOB 1 scenario were the same as those described for the FTU scenario. Section 106 consultation on the KC-46A MOB 1 beddown proposed alternative at McConnell AFB is now complete.

#### **4.4.7 Land Use**

##### *4.4.7.1 FTU Scenario Land Use*

###### *4.4.7.1.1 Physical Development*

The majority of the physical development proposed to implement the FTU scenario at McConnell AFB would occur in existing industrial areas along the flightline, with the exception of the new Flight Training Center which would occur in an adjacent administrative area. The proposed construction, demolition, and activities are consistent with the current and future layout and organization of land use in the base's 2011 Installation Development Plan.

Subsequent operations and maintenance activities would conform to current and future land uses on base. Indirect effects from construction (such as noise, truck traffic, and dust) could result from implementation of the FTU scenario. However, these effects would be temporary and minor; there would be no long-term effect. Consequently, none of the physical development associated with implementation of the KC-46A FTU scenario at McConnell AFB is anticipated to result in impacts to land use.

Implementation of the FTU scenario would potentially require 141 housing units. There is no vacant family housing currently available on base. Considering the population of the surrounding area, the local housing market is expected to absorb the near-term housing demand through either rentals or home sales without the need for new residential development. In the future, the privatization contractor would provide additional housing through renovation and new construction on base, as needed (HQ AETC 2013). Assuming any future residential development conforms to existing base plans and compatible land use recommendations (as per the AICUZ study), future residential development associated with implementation of the FTU scenario is not anticipated to pose land use concerns.

Development proposed as part of the FTU scenario is not located close to the base boundary and, therefore, would have little impact on surrounding areas. The increase in personnel and family members would increase daily commuting to the base. The Installation Development Plan projects that the base access gates and roadway system are adequate and can meet future mission needs (McConnell AFB 2011a).

#### 4.4.7.1.2 Aircraft Operations

Implementation of the FTU scenario would double the number of aircraft operations at McConnell AFB. Volume II, Appendix C, Section C.1.3.2, presents the noise compatibility guidelines for noise exposure and various land uses, along with recommended noise abatement measures to reduce incompatible exposure levels.

Implementation of the FTU scenario at McConnell AFB would expose 369 additional (15 percent increase) acres to noise equal to or greater than 65 dB DNL, of which 273 acres are located outside the base. As shown on Figure 4-5, the areas exposed to these increased noise levels are primarily located north and east of the current noise envelope. On base, slight increases in noise are not expected to impact current or future land uses or mission activities. Although a slight increase (of about 1 dB) in noise exposure at the on-base child care facility is not optimal, it would not result in a significant impact. In off-base areas, FTU scenario 65 dB DNL noise contours are contained almost entirely within the extent of noise contours published in the 2004 McConnell AICUZ Report (see Figure 3-4).

Outside the base, levels of 65 dB DNL and higher would shift north in the community of Eastridge in areas zoned for commercial and residential use. The change in noise exposure at any given location could be between 1 and 3 dB. This neighborhood is mostly developed, with little potential for substantial change or future increase in density. Similarly, to the southwest, a slight increase could also affect a small pocket of residential use land on the east side of U.S. Highway 15. This change may be noticeable to some persons, and would result in a moderate impact on residential land use in these two locations.

Current zoning around the base would allow for new residential, commercial, and industrial development, which may be incompatible with accident potential and increased noise around the airfield. Although the protection overlay district allows the Zoning Administrator to approve an adjustment to property development standards within the district (Wichita/Sedgwick 2009), none have been formally adopted to date. As such, the potential for incompatible future development still exists. Several efforts are underway to update comprehensive plans and, subsequently, zoning for the surrounding areas. In the meantime, continued coordination between the base and the zoning administrators of surrounding areas would reduce the potential for approval of future incompatible development.

#### 4.4.7.1.3 Aircraft Operations – Auxiliary Airfields

KC-46A aircrews associated with the FTU scenario would use three different auxiliary airfields. However, these airfields would only be used to practice aircraft operations with no associated ground level development, and the noise increases resulting from aircraft operations noise at these airfields are projected to be less than 0.5 dB. Therefore, no changes to land use are anticipated from the use of the auxiliary airfields by KC-46A aircrews associated with the FTU scenario.

#### *4.4.7.2 MOB 1 Scenario Land Use*

##### *4.4.7.2.1 Physical Development*

The impacts on land use resulting from physical development associated with implementation of the MOB 1 scenario at McConnell AFB are similar to those associated with the FTU scenario, as described in Section 4.4.7.1.1. However, implementation of the MOB 1 scenario would involve substantially more new construction, renovation, and development. All of the projects proposed under the MOB 1 scenario are located in areas that are suitable for the intended mission functions.

Implementation of the MOB 1 scenario would result in a potential decrease in the need for 111 housing units.

##### *4.4.7.2.2 Aircraft Operations*

Impacts on land use resulting from the airfield operations associated with the MOB 1 scenario at McConnell AFB would be less than those described for the FTU scenario at McConnell AFB. Because the KC-46A is quieter than the KC-135 and total airfield operations would be less under the MOB 1 scenario than under the FTU scenario, noise exposure associated with the MOB 1 scenario surrounding the base is projected to decrease from current levels. Specifically, the area exposed to noise levels of 65 dB DNL or greater outside the base would decrease by about 386 acres compared with baseline conditions. This would result in a slight benefit to surrounding land uses such as residential areas, from lower noise.

As described in the safety sections (3.4.3 and 4.4.3), the accident rate is expected to be very low. Because the accident potential would remain low and the pre-existing incompatible uses are relatively minimal (with low-density residential and one incompatible commercial business), significant impacts on land use resulting from implementing the MOB 1 scenario are not expected.

##### *4.4.7.2.3 Aircraft Operations – Auxiliary Airfields*

There are no projected operations at auxiliary airfields for the MOB 1 scenario at McConnell AFB.

#### **4.4.8 Infrastructure**

Refer to Section 3.4.8 for a description of existing infrastructure system capacities and conditions at McConnell AFB. Table 2-16 provides changes in population due to implementation of the FTU scenario and Table 2-19 indicates changes in population due to the MOB 1 scenario at McConnell AFB. These changes in population and proposed development were used to determine the impact on infrastructure. For each scenario, the maximum demand or impact on capacity was calculated for the potable water, wastewater, electric, and natural gas systems based on the change in population. To identify maximum demand or impact on these systems, any change in population was assumed to live on base. For the assessment of the transportation infrastructure, any change in population was assumed to reside off base.

##### *4.4.8.1 FTU Scenario Infrastructure Consequences*

###### *4.4.8.1.1 Potable Water System*

Between 2006 and 2010, the average per capita potable water demand in the City of Wichita was 137 GPD (KDA 2012). Using that amount as a planning factor, the change in population for the

FTU scenario would create an additional water use demand of 0.13 MGD. This scenario would increase average daily demand from 10 to 15 percent of base system capacity and peak demand from 14 to 19 percent of base system capacity.

#### 4.4.8.1.2 Wastewater

The USEPA estimates that the average person generates approximately 100 GPD of wastewater between showering, toilet use, and general water use (USEPA 2013c).

Using this planning factor along with the change in population, the FTU scenario would increase average daily wastewater discharge from McConnell AFB by 0.1 MGD. This would increase average daily discharge from 7 to 9 percent of base system capacity and peak discharge from 27 to 29 percent of base system capacity.

#### 4.4.8.1.3 Stormwater System

In general, the stormwater drainage system at McConnell AFB provides adequate collection to manage water from developed areas and prevent site erosion to meet current mission requirements. However, the lack of on-base retention basins reduces the ability to manage stormwater during peak flow events.

The majority of this work would occur in previously disturbed areas. Table 2-17 identifies the projects associated with the FTU scenario; the total potential disturbed area associated with these projects would not exceed 7 acres (new construction and additions/alterations). During the short-term construction period for the FTU scenario, the contractor would be required to comply with applicable statutes, standards, regulations, and procedures regarding stormwater management during construction. During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures. A SWPPP update would be required, and the requirements of the EISA would be followed to maintain or restore, to the maximum extent practical, the predevelopment hydrology of the property with regard to temperature, rate, volume, and duration of flow.

#### 4.4.8.1.4 Electrical System

To estimate the change in residential electrical use associated with personnel and their dependents, data from the USEIA were used to identify that residential consumers averaged about 11.8 kilowatt hours (KWH) per person per year (1,215,411 users) in Kansas in 2011 (the best available statistics), with a total of about 14,343,748 MWH consumed in 2011 (USEIA 2011). Using that amount as a planning factor along with the change in population, implementation of the FTU scenario would increase the state annual residential demand for electricity by 10,952 MWH per year. This represents less than 1 percent of total state-wide usage in 2011. Assuming the change in population resides on McConnell AFB and uses electricity at the 2011 residential average rate of 0.04 MWH per person per day, the FTU scenario would increase the average daily use of electricity by 30.01 MWH per day. Implementation of the FTU scenario would increase daily demand from 47 to 56 percent of base system capacity and peak demand from 60 to 69 percent of base system capacity.

#### 4.4.8.1.5 Natural Gas System

To estimate the additional residential natural gas use associated with personnel and their dependents, data from the USEIA were used to identify that residential consumers averaged about 0.08 MMcf per person per year (854,730 users) in Kansas in 2011, with a total of about 65,499 MMcf consumed (USEIA 2011). Using that amount as a planning factor along with the change in population, implementation of the FTU scenario would increase state annual residential demand for natural gas by 72 MMcf per person. This represents less than 1 percent of the total state-wide residential usage in 2011. Assuming the change in population reside on McConnell AFB and uses natural gas at the 2011 residential average rate of 0.21 Mcf per person per day, implementation of the FTU scenario would increase the average daily use of natural gas by 191 Mcf per person per day. The FTU scenario would increase average daily demand from 16 to 23 percent of base system capacity and peak demand from 36 to 43 percent of base system capacity.

#### 4.4.8.1.6 Solid Waste Management

Using an estimating multiplier methodology developed by the USEPA (USEPA 2009b) to determine the amount of C&D debris, it is estimated that implementation of the FTU scenario would result in approximately 3,802 tons of C&D debris that would require recycling or removal to landfills. The DoD has set a target diversion rate of 60 percent of C&D debris by fiscal year 15 (DoD 2012) to be reused or recycled based on an integrated C&D debris diversion approach. Application of the 60 percent diversion target rate would result in approximately 2,281 tons being reused or recycled and approximately 1,521 tons being placed in the Brooks or Construction, Demolition & Recycle (CDR) Landfills or a combination of both. Both landfills have adequate capacity to accept the estimated C&D debris from the FTU scenario.

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, ACM, LBP, or other hazardous components, would be managed in accordance with AFI 32-7042, "Waste Management."

#### 4.4.8.1.7 Transportation

Implementation of any of the facilities and infrastructure projects for the KC-46A FTU scenario at McConnell AFB would require the delivery of materials to and removal of construction-related debris from demolition, renovation, and new construction sites. Trucks associated with these activities, along with construction crews, would access the base via the West Gate, which is the gate that all contractors and vendors must enter for inspections and identification badges. Construction-related traffic would comprise only a small portion of the total existing traffic volume in the area and at the base. The increased traffic could contribute to increased congestion at the West Gate, delays in the processing of access passes, and degradation of the affected road surfaces.

Additionally, intermittent traffic delays and temporary road closures could result in the immediate vicinity of the facility and infrastructure project sites. Potential congestion impacts could be avoided or minimized by scheduling truck deliveries outside of the peak inbound traffic time. Also, many of the heavy construction vehicles would be driven to the site and kept on base for the duration of the C&D activities, resulting in relatively few additional trips. Traffic delays would be temporary in nature, ending once construction activities have ceased. As a result, no long-term impacts to on- or off-base transportation infrastructure would result.

Implementation of the KC-46A FTU scenario at McConnell AFB would result in a slight increase in on-base mission personnel of 476 persons (full-time military, DoD civilians, other base personnel), or approximately a 10 percent increase in daily commuting traffic to and from the base. In addition to the increase in personnel, there would also be a small increase in dependent and commercial traffic. This assumes that all personnel and dependents live off base, work standard workdays, and drive individually to the base. For purposes of analysis, it is assumed that the additional students associated with the KC-46A FTU scenario would be housed on base and would not have an impact on daily traffic. The small increase in base mission personnel could increase congestion and queuing at the East Gate during morning and evening rush hours. To minimize this, the base could adjust the schedule of operations to accommodate this increase and/or provide additional personnel at the gate to process security checks during the peak hours. Regional access roads and the on-base road network have adequate capacity to absorb the small amount of additional traffic without major impacts on traffic flow, circulation, or level of service.

#### *4.4.8.2 MOB 1 Scenario Infrastructure Consequences*

##### *4.4.8.2.1 Potable Water System*

Based on the planning factor for potable water demand in the City of Wichita (see Section 4.4.8.1.1) along with the change in population associated with implementation of the MOB 1 scenario, there would be an increase in water demand of 0.03 MGD. Implementation of the MOB 1 scenario would increase average daily demand from 10 to 11 percent of base system capacity and would increase peak demand from 14 to 15 percent of base system capacity.

##### *4.4.8.2.2 Wastewater*

Implementation of the MOB 1 scenario would increase wastewater discharge by 0.02 MGD based on the USEPA wastewater planning factor (see Section 4.4.8.2.2) and the change in population. The MOB 1 scenario would increase peak discharge from 27 to 28 percent of base system capacity, while average daily discharge would remain unchanged at 7 percent of base system capacity.

##### *4.4.8.2.3 Stormwater System*

In general, the stormwater drainage system at McConnell AFB provides adequate collection to manage water from developed areas and prevent site erosion to meet current mission requirements. However, the lack of on-base retention basins reduces the ability to manage stormwater during peak flow events.

The majority of this work would occur on previously disturbed areas. Table 2-17 identifies the projects associated with the MOB 1 scenario; the total potential disturbed area associated with these projects would not exceed 12 acres (new construction and additions/alterations). During the design phase, a variety of stormwater controls could be incorporated into construction plans. These could include planting vegetation in disturbed areas as soon as possible after construction; constructing retention facilities; and implementing structural controls such as interceptor dikes, swales (excavated depressions), silt fences, straw bales, and other storm drain inlet protection, as necessary, to prevent sediment from entering inlet structures. A SWPPP update would be required, and the EISA would be followed for any disturbances of undeveloped land that exceed 5,000 square feet.

During the short-term construction period for the MOB 1 scenario, the contractor would be required to comply with applicable statutes, standards, regulations, and procedures regarding stormwater management during construction. The revised SWPPP and NPDES permits would be followed to

avoid and minimize the potential impacts that could occur during the short-term construction phase of the proposed new and renovated facilities or during operations under the MOB 1 scenario.

#### 4.4.8.2.4 Electrical System

Using the USEIA planning factor (see Section 4.4.8.1.4) and the change in population, implementation of the MOB 1 scenario would increase the state annual residential demand for electricity by 2,007 MWH per year. This represents an increase of less than 1 percent of the state-wide residential usage in 2011. Assuming the change in population resides on McConnell AFB and uses electricity at the 2011 residential average rate of 0.04 MWH per person per day, the MOB 1 scenario would increase daily use of electricity by 5.5 MWH per day. The MOB 1 scenario would increase daily demand from 47 to 48 percent of base system capacity and peak demand from 60 to 61 percent of base system capacity.

#### 4.4.8.2.5 Natural Gas System

Using the USEIA planning factor (see Section 4.4.8.1.5) and the change in population, implementation of the MOB 1 scenario would increase state annual demand for natural gas by 14 MMcf per person per year. This represents less than 1 percent of the state-wide usage in 2011. Assuming the change in population resides on McConnell AFB and uses natural gas at the 2011 residential average of 0.21 Mcf per person per day, implementation of the MOB 1 scenario would increase daily use of natural gas by 36 Mcf per day. The MOB 1 scenario would increase daily demand from 16 to 17 percent of base system capacity and peak demand from 36 to 38 percent of base system capacity.

#### 4.4.8.2.6 Solid Waste Management

For the MOB 1 scenario, it is estimated that approximately 12,894 tons of C&D debris would require recycling or removal to landfills. The DoD has set a target diversion rate of 60 percent of C&D debris to be reused or recycled. Application of the 60 percent diversion target rate would result in approximately 7,736 tons being reused or recycled and approximately 5,158 tons being placed in the Brooks or CDR Landfills or a combination of both. Both landfills have adequate capacity to accept the estimated C&D debris from the MOB 1 scenario.

Contractors would be required to comply with Federal, state, and local regulations for the collection and disposal of municipal solid waste from the base. C&D debris, including debris contaminated with hazardous waste, ACM, LBP, or other hazardous components, would be managed in accordance with AFI 32-7042, "Waste Management."

#### 4.4.8.2.7 Transportation

Implementation of the KC-46A MOB 1 scenario at McConnell AFB would have potential impacts similar to those described for the FTU scenario. However, because the demolition, renovation, and construction projects would include more total square footage than the projects associated with the FTU scenario, the number of construction-related truck trips and numbers of construction workers, along with duration of the time to complete the projects, would be greater. However, this increase would still not have a significant impact on gate access or the level of service and flow of traffic on or off base.

After the completion of the KC-135 drawdown at McConnell AFB, the KC-46A MOB 1 scenario would result in a minor decrease in on-base mission personnel of 77 persons (full-time military, DoD civilians, other base personnel), a decrease of approximately 2 percent in daily commuting

traffic to and from the base. However, there would be a minor increase in military dependents and family members. It is assumed that all personnel and dependents live off base, work standard workdays, and drive individually to the base. This decrease in base mission personnel would have a negligible effect on congestion and queuing at base gates during the morning and evening rush hours. Regional access roads and the on-base road network have adequate existing capacity, and no impacts on traffic flow, circulation, or level of service would occur.

#### **4.4.9 Hazardous Materials and Waste**

##### *4.4.9.1 FTU Scenario Hazardous Materials*

Section 4.1.9.1 describes the hazardous materials management specific to the KC-46A aircraft. Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through HAZMART are adequate to handle the changes anticipated with the addition of the new aircraft associated with the FTU scenario, but would be expanded to meet the increased use.

##### *4.4.9.1.1 Aboveground and Underground Storage Tanks*

The addition of KC-46A aircraft at McConnell AFB would increase the maximum daily consumption of JP-8. The increase in fuel consumption would be supported by the current infrastructure at the base. Some of the new and remodeled facilities would require the addition of new ASTs, USTs, and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to OWSs, if required, to contain releases of petroleum products. The McConnell AFB SPCC Plan (McConnell AFB 2013b) would subsequently need to be amended to capture any changes in facility design, construction, operation, or maintenance that materially affect the potential for a discharge.

##### *4.4.9.1.2 Toxic Substances*

Demolition, renovation, and addition/alteration projects are planned as part of the McConnell AFB FTU scenario. The asbestos registry indicates that ACMs have been positively identified within parts of some of the buildings that would be affected by the proposed KC-46A projects. Volume II, Appendix E, Table E-5, contains a list of buildings that would be affected by the projects, their years of construction, and their potential for ACMs to be present. Prior to initiating the projects, ACM would be identified through sampling and analysis of building materials. Exposed friable asbestos would be removed in accordance with applicable Federal, state, local, and USAF rules and regulations. Before initiating the ACM removal work, the required notifications would be completed. No work on an ACM project would be conducted unless performed by persons with current certificates of training in accordance with standards established by OSHA and the USEPA. All ACM wastes would be disposed of at a waste disposal site authorized to accept such waste. Additionally, the handling and disposal of ACM wastes would be performed in accordance with the McConnell AFB Asbestos Management and Operations Plan (McConnell AFB 2003) and in compliance with Federal, state, and local regulations. Transport and disposal documentation records, including signed manifests, would also be required.

Based on their years of construction, a few buildings that are proposed for renovation, alteration, or demolition have the potential for containing LBP. Volume II, Appendix E, Table E-5, contains a list of buildings proposed for modification under the FTU scenario, and their potential to contain LBP. According to standard operating procedures, LBP surveys would be conducted prior to any renovation or demolition activities. Demolition of structures known to contain LBP

would be conducted in accordance with applicable regulations. Proper disposal of any resulting lead-containing wastes would also be conducted in accordance with Federal regulations, including the Toxic Substances Control Act and the Occupational Safety and Health Act. Further, these wastes would be accompanied by a waste manifest and disposed of at an approved off-base disposal facility.

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A FTU scenario at McConnell AFB, and long-term benefits from removal of toxic substances are anticipated.

#### *4.4.9.2 Hazardous Waste Management*

McConnell AFB would continue to generate hazardous wastes during various operations and maintenance activities. Hazardous waste disposal procedures, including off-base disposal procedures, are adequate to handle changes in quantity and would remain the same. Hazardous waste anticipated to be generated by the KC-46A FTU scenario would be consistent with waste generated by the KC-135. Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. Operations involving hexavalent chromium, cadmium, and halon (i.e., an ODS) have been eliminated or minimized to the extent possible (Boeing 2013). Hazardous materials such as TCE have available alternates and will not be required for the KC-46A. No new hazardous materials would be added that exceed McConnell AFB's current hazardous waste processes.

#### *4.4.9.3 Environmental Restoration Program*

Modifications and/or additions to existing buildings for the FTU scenario at McConnell AFB under the proposed action would occur in proximity to existing ERP sites. The USAF would coordinate with the restoration office before any modifications are initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current EIAP processes, as specified in AFI 32-7061.

The USAF would ensure that modifications are coordinated with ongoing remediation or investigation activities at any Resource Conservation and Recovery Act site. However, if existing plans and procedures are followed, there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required.

The FTU scenario at McConnell AFB would require the demolition of Buildings 977, 978, 984, and 985 to construct a fuel cell, corrosion control, and maintenance hangar. The southern part of this proposed construction area overlies ERP site OWS 545 (Former Building 980) that has multiple contaminant sources consisting of releases from a former OWS, which was removed in 2006, and surface spills. Soils and groundwater have been impacted by heavy petroleum products, fuels, and VOCs (mostly TCE) (McConnell AFB 2013c). According to the Management Action Plan, there are no limitations on construction for site OW545. There are five groundwater

monitoring wells (B980-MW1, B980-MW3, and B980-MW6 through B980-MW8) within the proposed construction area that may need to be abandoned and replaced.

ERP site SS001 also has benzene and TCE plumes just north and east of the proposed fuel cell, corrosion control, and maintenance hangar. There is one groundwater monitoring well (SS01-MW14) within the proposed construction area that may need to be abandoned and replaced.

The depth to groundwater is generally 20 to 30 feet bgs across McConnell AFB (Knight 2013). There are no prohibitions regarding subsurface excavation. Groundwater at these depths would not be anticipated to be encountered during C&D activities.

As part of the new ramp and apron construction, existing concrete would be demolished and replaced. A substantial volume of construction debris and demolition waste could impact local and regional waste facilities/landfills. Further investigation and consideration of waste diversion strategies are needed to determine the degree of impact on solid waste facilities.

#### *4.4.9.4 MOB 1 Scenario Hazardous Materials*

Existing procedures for the centralized management of the procurement, handling, storage, and issuance of hazardous materials through HAZMART are adequate to handle the changes anticipated with the MOB 1 scenario, but would be expanded to meet the increased use.

##### *4.4.9.4.1 Aboveground and Underground Storage Tanks*

Because the 36 KC-46A aircraft would replace the existing 44 PAA KC-135 aircraft, a potential reduction in the maximum daily consumption of JP-8 could occur. However, the increase in aircraft operations could account for increased JP-8 consumption even though eight fewer aircraft are proposed under the MOB 1 scenario. The increased fuel consumption would be supported by the current infrastructure. Some of the new and remodeled facilities would require the addition of new ASTs, USTs, and hazardous materials and hazardous waste containers. The new and remodeled facilities would be constructed with berms and drains leading to OWSs, if required, to contain releases of petroleum products. The McConnell AFB SPCC Plan (McConnell AFB 2013b) would subsequently need to be amended to capture any changes in facility design, construction, operation, or maintenance that materially affect the potential for a discharge.

##### *4.4.9.4.2 Toxic Substances*

The primary difference between the KC-46A FTU and MOB 1 scenarios at McConnell AFB would be the additional buildings that are proposed to be affected under the MOB 1 scenario. The same plans, provisions, and requirements for ACM and LBP described for the FTU scenario would apply to the MOB 1 scenario. Volume II, Appendix E, Table E-6, contains a list of buildings that would be affected by the projects, their years of construction, and their potential for ACMs and LBP to be present.

Although minor increases in the management requirements for ACM and LBP removal are anticipated, no adverse impacts are anticipated to result from implementation of the KC-46A MOB 1 scenario at McConnell AFB, and long-term benefits from removal of toxic substances are anticipated.

#### *4.4.9.5 Hazardous Waste Management*

McConnell AFB would continue to generate hazardous wastes during various operations and maintenance activities. Hazardous waste disposal procedures, including off-base disposal procedures, are adequate to handle changes in quantity and would remain the same. Hazardous

waste anticipated to be generated by the KC-46A MOB 1 scenario would be consistent with waste generated by the KC-135. Waste-associated maintenance materials include adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, cleaners, strippers, tapes, and wipes. Operations involving hexavalent chromium, cadmium, and halon (i.e., an ODS) have been eliminated or minimized to the extent possible (Boeing 2013). Hazardous materials such as TCE have available alternates and will not be required for the KC-46A. No new hazardous materials would be added that exceed McConnell AFB's current hazardous waste processes.

#### *4.4.9.6 Environmental Restoration Program*

Modifications and/or additions to existing buildings for the MOB 1 scenario at McConnell AFB under the proposed action would occur in proximity to existing ERP sites. The USAF would coordinate with the restoration office before any modifications are initiated. Although formal construction waivers are not required, the USAF does require reviews of excavation and/or construction siting and compatibility with environmental cleanup sites be conducted and documented in accordance with current EIAP processes, as specified in AFI 32-7061.

The USAF would ensure that modifications are coordinated with ongoing remediation or investigation activities at any ERP site. However, if existing plans and standard practices are followed, there would be no anticipated impacts on these ERP sites. During C&D activities, there is the potential to encounter contaminated soil and groundwater in areas associated with ERP sites. There is also the possibility that undocumented contaminated soils from historical fuel spills may be present. If encountered, storage/transport/disposal of contaminated groundwater/soils would be conducted in accordance with applicable Federal, state, and local regulations; AFIs; and base policies. If soil or groundwater contaminants are encountered during C&D activities, health and safety precautions, including worker awareness training, may be required. Construction of utility corridors within previously disturbed areas would help minimize impacts.

Implementation of the MOB 1 scenario at McConnell AFB would require the demolition of Buildings 977, 978, 984, 985, and 1102 to construct a fuel cell, corrosion control, and maintenance hangar. The proposed construction area between Buildings 977, 985, and 1102 is located over ERP site OWS 545 (former Building 980), which has multiple contaminant sources consisting of surface spills and releases from a former OWS (removed in 2006). Soils and groundwater have been impacted by heavy petroleum products, fuels, and VOCs (mostly TCE) (McConnell AFB 2013c). According to the Management Action Plan, there are no limitations on construction for site OW545. There are nine groundwater monitoring wells (B980-MW1, B980-MW3 through B980-MW8, B980-MW10, and B980-MW14) within the proposed construction area that may need to be abandoned and replaced.

ERP site SS003 has a VOC plume (TCE, cis-1,2-dichloroethene, and gasoline range organics), presumably from a leaking OWS, that appears to be located over the southern extent of the proposed new fuel line. There are four groundwater monitoring wells (SS03-MW3, SS03-MW4, SS03-MW11, and SS03-MW18) within the proposed construction area that may need to be abandoned and replaced.

ERP site SS001 also has benzene and TCE plumes just north and east of the proposed fuel cell and corrosion control maintenance hangar.

The depth to groundwater is generally 20 to 30 feet bgs across McConnell AFB (Knight 2013). There are no prohibitions regarding subsurface excavation. Groundwater at these depths is not anticipated to be encountered during C&D activities.

#### **4.4.10 Socioeconomics**

##### *4.4.10.1 FTU Scenario Socioeconomics Consequences*

###### **4.4.10.1.1 Population**

The current personnel at McConnell AFB and the projected changes anticipated to support the KC-46A FTU scenario are provided in Table 2-16. Implementation of the FTU scenario would potentially add up to 570 people to Sedgwick County, resulting in an approximate 0.2 percent county population increase. This potential increase is based on the assumption that the 315 DoD civilians, 20 part-time Reservists, and 23 contractors would be from Sedgwick County.

###### **4.4.10.1.2 Economic Activity (Employment and Earnings)**

As shown in Table 2-16, the FTU scenario at McConnell AFB would increase the work force assigned to McConnell AFB by 679 total personnel. The personnel would comprise 141 full-time military, 200 students, 315 DoD civilians, and 23 contractors. The addition of 679 people to McConnell AFB would increase on-base jobs from 4,358 to 5,037, or an approximate 15.6 percent increase. The IMPLAN model calculates that approximately 375 indirect and induced jobs in the ROI would result from implementation of the FTU scenario, with most of the jobs being created in industries such as food services, private hospitals, and real estate establishments. With a 2012 unemployment rate of 6.9 percent, it is expected that the local labor force would be sufficient to fill these new jobs without a migration of workers into the area.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited amount of economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,309 direct, indirect, and induced jobs would be created (MIG 2012). The USAF estimates that approximately \$154 million in construction and \$16 million in O&M expenditures would be required to implement the FTU scenario at McConnell AFB. The total amount of construction and O&M expenditures could generate approximately 2,234 jobs primarily within the construction industry or related industries, including architectural, engineering and related services, food services, private hospitals, and real estate establishments (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs. The indirect and induced income associated with construction expenditures is estimated to be approximately \$36 million. These jobs, and the related income, would be temporary during the construction activity.

###### **4.4.10.1.3 Housing**

Under the assumptions that only DoD civilians, part-time Reservists, and contractors would be from the local population (as stated in Section 4.4.10.1.1) and that all incoming full-time military personnel would require housing off base, there would be a potential need for 141 off-base housing units. Under these assumptions and based on the number of vacant homes described in Section 3.4.10.1.3, the housing market in the ROI would be anticipated to support this need.

All 200 projected pilot and boom operator/loadmaster students, while assigned to the FTU, would be assumed to be in transient status. It would be assumed that 180 of these 200 students would be lodged in either on- or off-base facilities as available. Only 20 of these 200 students would be assumed to be non-prior service Airmen, and therefore would be required to live in an on-base dormitory. Therefore, under the FTU scenario at McConnell AFB, there would be a potential need

for 180 lodging units either on or off base and 20 dormitory units on base to support the average daily student load of 200. Based on the current and projected capacities of both on- and off-base lodging and on-base dormitories, there are adequate facilities available to support the 200 students. However, prior to implementing the FTU scenario, an HRMA would be required to determine the number of suitable and available housing units within the HRMA-defined market area (20 miles or one-hour commute drive from the base gate, whichever is shorter).

#### 4.4.10.1.4 Education

As shown in Table 2-16, the overall change in the number of military dependents and family members accompanying additional USAF personnel associated with the FTU scenario would be approximately 229 people. The total number of dependents, including spouse and children, was estimated at 2.5 times 65 percent of full-time military personnel only. The total number of children was estimated at 1.5 times 65 percent of full-time military personnel, since it was assumed each military member would be accompanied by a spouse. Thus, it is estimated that 137 military dependents would be anticipated to be of school age. These students would attend any of the 10 public school districts in the county. The students entering the local schools would be of varying ages and would be expected to live in different parts of Sedgwick County. Space available for new enrollments depends on the timing of the relocation and which schools the students would attend. A large influx of students over a short period could result in capacity constraints and could require additional personnel.

#### 4.4.10.1.5 Public Services

Sedgwick County represents a large community with police, fire, and other services. The addition of approximately 570 people would represent less than a 0.2 percent increase of the existing population in Sedgwick County. That increase would not be expected to affect police, fire, or other public services.

#### 4.4.10.1.6 Base Services

Base services such as medical facilities, dining facilities, recreation and fitness centers, and youth and family services have adequate infrastructure and staffing to support the incoming personnel that would be associated with the FTU scenario.

### 4.4.10.2 *MOB 1 Scenario Socioeconomics Consequences*

#### 4.4.10.2.1 Population

The current personnel at McConnell AFB and the projected change anticipated to support the MOB 1 scenario are provided in Table 2-19. Implementation of the MOB 1 scenario would result in a decrease of 291 people within Sedgwick County (approximately 0.1 percent of the county population). This potential decrease is based on the assumption that the DoD civilians, part-time Reservists, and contractors would be from Sedgwick County.

#### 4.4.10.2.2 Economic Activity (Employment and Earnings)

As shown in Table 2-19, implementation of the MOB 1 scenario at McConnell AFB would decrease the work force assigned to McConnell AFB by 77 personnel after taking into consideration the manpower decrease associated with the KC-135 drawdown. The personnel would comprise a decrease of 111 full-time military, an increase of 14 DoD civilian, and an increase of 20 contractors. The loss of 77 personnel associated with the KC-135 drawdown

would decrease on-base jobs from 4,358 to 4,281, or an approximate 1.8 percent decrease. The IMPLAN model calculates that approximately 43 indirect and induced jobs in the ROI would be lost with implementation of the MOB 1 scenario, with most of the job loss in industries such as food services, private hospitals, and real estate establishments.

Construction activities, in general, provide economic benefits to the surrounding areas through the employment of construction workers, as well as the purchase of materials and equipment. These construction activities would be temporary and would only provide a limited amount of economic benefit. For every \$100 million spent on construction of other new nonresidential structures in the ROI, an estimated 1,309 direct, indirect, and induced jobs would be created (MIG 2012). The USAF estimates that approximately \$264 million in construction expenditures would be associated with implementing the MOB 1 scenario at McConnell AFB. This amount could generate approximately 3,455 jobs primarily within the construction industry or related industries, including architectural and engineering services, food services, and private hospitals (MIG 2012). Since the construction activities are scheduled over several years and it would be possible for a single worker to work on multiple projects, it is expected that the local labor force in the ROI and in the surrounding areas would be sufficient to fill these new jobs without a migration of workers into the area. The indirect and induced income associated with construction expenditures is estimated to be approximately \$55 million. These jobs, and the related income, would be temporary during the construction activity.

#### 4.4.10.2.3 Housing

The housing market in the ROI is anticipated to have the necessary housing units to support implementation of the replacement KC-46A MOB 1 scenario. This is based on the KC-135 drawdown of 1,920 full-time military personnel relative to the anticipated 1,809 full-time incoming military personnel associated with the MOB 1 scenario. Again, this analysis is based on the assumption that the DoD civilians, part-time Reservists, and contractors would be from Sedgwick County (as stated in Section 4.4.10.2.1). In addition, the MOB 1 scenario includes the construction of a new 75-unit Visiting Quarters, which would provide sufficient capacity for temporary-duty personnel. However, prior to implementing the MOB 1 scenario, an HRMA would be required to determine the number of suitable and available housing units within the HRMA-defined market area (20 miles or one-hour commute drive from the base gate, whichever is shorter).

#### 4.4.10.2.4 Education

As shown in Table 2-19, after considering the incoming military dependents associated with the MOB 1 scenario and the departing military dependents associated with the KC-135 drawdown, there would be an approximate overall decrease of 180 military dependents and family members. The total number of school-aged children was estimated at 1.5 times 65 percent of full-time military personnel only for both the KC-46A incoming and the KC-135 drawdown personnel. Therefore, approximately 108 students would be anticipated to leave any of the 10 public school districts within Sedgwick County.

#### 4.4.10.2.5 Public Services

Sedgwick County represents a large community with police, fire, and other services. The change in USAF-related personnel and dependents would represent less than a 0.1 percent decrease of the existing population in Sedgwick County. That decrease would not be expected to affect police, fire, or other services.

#### 4.4.10.2.6 Base Services

Base services such as medical facilities have adequate capacity to support the proposed MOB 1 scenario. Due to the transition of mission from the KC-135 to the KC-46A, base services have sufficient capacity in the CDC, housing, fitness, and dining facilities to support the incoming personnel.

### 4.4.11 Environmental Justice and the Protection of Children

#### 4.4.11.1 FTU Scenario Environmental Justice and the Protection of Children Consequences

Implementation of the FTU scenario would result in a 3 percent increase in minority population exposure to noise levels between 65 and 69 dB DNL and a 1 percent increase in low-income population exposure to these same noise levels over the baseline noise currently being experienced at McConnell AFB (see Table 4-30). Because these increases are anticipated to be 3 percent or less over baseline, no disproportionate impacts to off-base populations of minorities, low-income persons, or children are anticipated to result from implementation of the FTU scenario at McConnell AFB.

**Table 4-30. Percentage of Off-Base Population Potentially Exposed to Noise Levels of 65 dB DNL or Greater for McConnell AFB**

Scenario	Percentage Minority		Percentage Low-Income		Percentage Children (Under 18)	
	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL	65–69 dB DNL	70–74 dB DNL
FTU	51%	24%	18%	22%	27%	16%
MOB 1	20%	0%	21%	0%	19%	0%
Baseline (Existing Conditions)	48%	24%	17%	22%	29%	16%
Region of Comparison	30%		14%		27%	

#### 4.4.11.2 MOB 1 Scenario Environmental Justice and the Protection of Children Consequences

As shown on Figure 4-6, the 65–69 dB DNL noise contour resulting from the MOB 1 scenario is completely contained inside the baseline noise contour and the analysis indicates that off-base populations of minorities, low-income persons, and children would not be exposed to noise levels above what is occurring under the baseline conditions (see Table 4-30). However, this table indicates a 4 percent increase in the percentage of low-income populations exposed to the 65–69 dB DNL contour. This difference is not an increase in the number of low-income people, but a difference in the proportion of this population exposed to this level of noise.

## **4.5 NO ACTION ALTERNATIVE**

Analysis of the No Action Alternative provides a benchmark, enabling decision makers to compare the magnitude of the environmental effects of the proposed action or alternatives. Section 1502.14(d) of NEPA requires an EIS to analyze the No Action Alternative. No action for this EIS means that the KC-46A beddown would not occur at any base at this time. The No Action Alternative would not establish the KC-46A FTU and associated aircraft and it would not establish the KC-46A MOB 1 and associated aircraft. There would be no changes in base aircraft or personnel assigned to the KC-135 aircraft squadrons. No KC-46A aircraft would arrive, and all existing aircraft would remain in place. No KC-46A personnel changes or construction, renovation, or demolition activities would occur.

The No Action Alternative has been carried forward in the EIS per CEQ regulations and as a baseline of existing impact continued into the future against which to compare impacts of the action alternatives.

Evaluation of the No Action Alternative compares the effects of implementing the KC-46A FTU and MOB 1 scenarios with the effects of the No Action Alternative at each base and for each resource area.

Under the No Action alternative:

- There would be no change in based aircraft at Altus AFB; operations at Altus AFB would continue as described for baseline conditions. The 97 AMW would continue to fly the training mission with a PAA of 18 KC-135 aircraft and the personnel described under baseline conditions.
- There would be no change in based aircraft at Fairchild AFB and aircraft operations would continue as described for baseline conditions. The 92 ARW would continue to fly aerial refueling missions with a PAA of 30 KC-13 aircraft. In addition, the SERE, JPRA, and KC-135 WIC missions would continue.
- There would be no change in based aircraft at Grand Forks AFB; existing RPA operations at Grand Forks AFB would continue as described for baseline conditions. The 319 ABW would continue their base operating and direct operation support mission as described under baseline conditions.
- There would be no change in based aircraft at McConnell AFB; operations at McConnell AFB would continue as described for baseline conditions. The 22 ARW would continue to fly the aerial refueling mission with a PAA of 44 KC-135 aircraft and the personnel described under baseline conditions.

Impacts of the implementation of the No Action Alternative on each resource area evaluated in this Final EIS are described below.

### **4.5.1 Noise**

Under the No Action Alternative, baseline conditions at each base would remain as described in Chapter 3 Noise sections. No changes would occur to the noise levels surrounding each base and the noise contours would remain as they are today. As no construction would occur, no noise associated with construction activities would result from the implementation of this alternative. Impacts under the No Action Alternative would be negligible.

#### **4.5.2 Air Quality**

Under the No Action Alternative, baseline conditions at each base would remain as described in Chapter 3 Air Quality sections. No changes would occur. No construction emissions would occur and operational emissions would be identical to the current baseline conditions. Impacts under the No Action Alternative would be negligible.

#### **4.5.3 Safety**

Under the no action alternative, baseline conditions at each of base would remain as described in the Chapter 3 Safety sections. No additional impacts would occur to ground or flight safety.

#### **4.5.4 Soils and Water**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Soils and Water sections. None of the KC-46A proposed construction would occur and no impacts on soil and water resources would occur.

#### **4.5.5 Biological Resources**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Biological Resources sections. No vegetation or wildlife habitat would be disturbed as a result of implementing either of the KC-46A scenarios. No additional impacts on biological resources would be anticipated.

#### **4.5.6 Cultural Resources**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Cultural Resource sections. No additional impacts on historical buildings or other cultural resources would occur.

#### **4.5.7 Land Use**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Land Use sections. No changes would occur to planning noise contours surrounding the bases and no land use changes would occur within the base boundaries.

#### **4.5.8 Infrastructure**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Infrastructure sections. No new construction would occur and no new personnel would arrive or decrease at any of the bases. No additional impacts on the infrastructure system at any of the bases would occur.

#### **4.5.9 Hazardous Materials and Waste**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Hazardous Materials and Waste sections. Each base would continue to use hazardous materials and dispose of hazardous waste as described for each base's baseline conditions.

#### **4.5.10 Socioeconomics**

Under the No Action Alternative, baseline conditions would remain as described in the Chapter 3 Socioeconomics sections for each base. No new personnel increases or decreases would occur at

any of the bases and none of the bases would receive the benefits of a population increase. No construction would occur and therefore no construction related beneficial expenditures would occur.

#### **4.5.11 Environmental Justice and the Protection of Children**

Under the No Action Alternative, baseline conditions at each base would remain as described in the Chapter 3 Environmental Justice sections. There would be no environmental justice impacts or impacts on populations of children at any of the bases.

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# CHAPTER 5

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## CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES





## **5.0 CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

The Council on Environmental Quality (CEQ) regulations stipulate that the cumulative effects analysis in an Environmental Impact Statement (EIS) should consider the potential environmental consequences resulting from “the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other actions” (40 *Code of Federal Regulations* [CFR] 1508.7).

Actions that have a potential to interact with the KC-46A beddown scenarios at each of the four bases are included in this cumulative effects analysis. This approach enables decision makers to have the most current information available so that they can evaluate the range of environmental consequences that would result from the beddown of KC-46A aircraft, infrastructure, and personnel at these locations. Although known construction and upgrades are a part of the analysis contained in this document, potential future requirements of the KC-46A beddown cannot be predicted. As those requirements surface, future National Environmental Policy Act (NEPA) analysis would be conducted, as required.

In this chapter, the U.S. Air Force (USAF) has identified past and present actions in the region of each of the four bases that have been selected as alternatives to host either the Formal Training Unit (FTU) or First Main Operating Base (MOB 1) scenarios. In addition, this analysis also evaluated reasonably foreseeable future actions that are in the planning phase in the regions surrounding Altus Air Force Base (AFB) in Oklahoma, Fairchild AFB in Washington, Grand Forks AFB in North Dakota, and McConnell AFB in Kansas. Although auxiliary airfields have been identified for use by KC-46A aircrews associated with the FTU scenario at Altus and McConnell AFBs, no construction, ground disturbance, or other activities beyond flight operations are proposed for those locations; therefore, cumulative effects are not evaluated for any of the auxiliary airfields.

The assessment of cumulative effects begins with defining the scope of other project actions and the potential interrelationship with the proposed action (CEQ 1997). The scope of the analysis must consider other projects that coincide with the location and timetable of implementation of the proposed KC-46A beddown scenarios at each base. Cumulative effects can arise from single or multiple actions and through additive or interactive processes acting individually or in combination with each other. Actions that are not part of the proposal, but that could be considered as actions connected in time or space (40 CFR 1508.25) (CEQ 1997) could include projects that affect areas on or near any of the four bases identified as alternatives for either the FTU or MOB 1 KC-46A scenarios. This Final EIS analysis addresses three questions to identify cumulative effects:

1. Does a relationship exist such that elements of the proposed action or alternatives might interact with elements of past, present, or reasonably foreseeable actions?
2. If one or more of the elements of the alternatives and another action could be expected to interact, would the alternative affect or be affected by impacts of the other action?
3. If such a relationship exists, does an assessment reveal any potentially significant impacts not identified when the alternative is considered alone?

For the scenarios under consideration to have a cumulatively significant impact on an environmental resource, two conditions must be met. First, the combined impacts of all identified past, present, and reasonably foreseeable projects, activities, and processes on a resource, including the impacts of the proposed action, must be significant. Second, the proposed action

must make a substantial contribution to that significant cumulative impact. Proposed actions of limited scope do not typically require as comprehensive an assessment of cumulative impacts as proposed actions that have significant environmental impacts over a large area (CEQ 2005).

In the sections below, the cumulative significance is based on the context, intensity and timing of the KC-46A FTU and MOB 1 scenarios, as discussed in Chapter 4, related to the past, present, and reasonably foreseeable actions. For each base, a summary of the cumulative effects is provided in a table, followed by a discussion of the resource areas that have potentially significant cumulative effects based on the above evaluation criteria.

## **5.1 ALTUS AIR FORCE BASE (FTU OR MOB 1) CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

### **5.1.1 Past, Present, and Reasonably Foreseeable Actions**

This section provides decision makers with the cumulative effects of the proposed FTU or MOB 1 scenario at Altus AFB, as well as the incremental contribution of past, present, and reasonably foreseeable actions. Altus AFB has been identified by the USAF as the Preferred Alternative for the FTU scenario but also remains an alternative for the MOB 1 scenario.

Table 5-1 summarizes past, present, and reasonably foreseeable actions within the region that could interact with implementation of the KC-46A FTU or MOB 1 scenario at Altus AFB. The table briefly describes each identified action, presents the proponent or jurisdiction of the action and the timeframe (e.g., past, present/ongoing, future), and indicates which resources potentially interact with the KC-46A scenarios at Altus AFB. No other actions were identified during the data gathering and field survey phases at Altus AFB for this EIS.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Originally named Altus Army Airfield, the base was constructed in 1942, with military personnel and aircraft arriving in 1943. Altus AFB is currently home to the 97th Air Mobility Wing and supports four major units: the 97th Operations Group, the 97th Mission Support Group, the 97th Maintenance Directorate, and the 97th Medical Group (Altus AFB 2009c). For most resource areas, such as soils and water, biological resources, infrastructure, and hazardous materials and waste, the impacts of past actions are now part of the existing environment and are incorporated in the description of the affected environment in Chapter 3.

**Table 5-1. Past, Present, and Reasonably Foreseeable Actions at Altus AFB and Associated Region**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions</b>				
General Plan, Altus Air Force Base, Oklahoma (Altus AFB 2003)	Air Education and Training Command, Altus AFB	Present, future	The Altus AFB General Plan provides the Base Commander and other decision makers a picture of Altus AFB's present and future capability to support its mission with its physical assets and delivery systems. It is a concise, stand-alone document, summarizing information from a variety of sources. It serves as a guide for site-specific future development and provides general background information in land use growth patterns. Its illustrative format provides decision makers with an understanding of the character and structure of the base.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics
Final Environmental Assessment, General Plan-Based Environmental Impact Analysis Process (Altus AFB2009c)	Air Education and Training Command, Altus AFB	Present, future	The 97 Civil Engineer Squadron at Altus AFB has planned future base development based upon the Capital Improvements Program contained within the current Altus AFB General Plan. The purpose of the proposed and alternative actions is to construct, renovate, demolish, and operate facilities and infrastructure to support current and potential future training levels at Altus AFB and to improve the effectiveness of training; enhance quality of life; replace old, inadequate facilities; and correct current deficiencies. The proposed and alternative actions provide a range of construction, renovation, and demolition projects to support a higher level of planned mission activity.	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics, Environmental Justice and the Protection of Children
Sikorsky Training Academy (Sikorsky 2013)	Sikorsky Aerospace Services	Not applicable	After publication of the Draft EIS this project was cancelled. Text concerning potential cumulative impacts associated with the project has been removed from this Final EIS.	Not applicable

**Table 5-1. Past, Present, and Reasonably Foreseeable Actions at Altus AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>State and Local Actions</b>				
City of Altus Comprehensive Plan 2025 (City of Altus 2004)	City of Altus, Oklahoma	Present, future	The Altus Comprehensive Plan provides a framework for long-range planning of Altus and its 3-mile City-County planning area. It provides a broad context in which local decisions may be made to foster a sustainable environment, a prosperous economy, and a high quality of life for all residents. It balances population, housing, and employment growth with the preservation of open space and prime agricultural lands, as well as infrastructure needs.	Land Use, Infrastructure, Socioeconomics
Altus AFB Joint Land Use Study (BD&Co 1999)	City of Altus and Jackson County, Oklahoma	Present, future	The Joint Land Use Study (JLUS) is a collaborative land use planning effort involving a military base and adjacent local governments. The study evaluates the planning rationale necessary to support and encourage compatible land use development surrounding the base. Its purpose is to provide support to sustain and provide flexibility to military missions on the base while guiding the long-term land use needs of the neighboring counties and communities.	Noise, Land Use, Infrastructure, Socioeconomics

### 5.1.2 Cumulative Effects

This section evaluates the cumulative effects from the past, present, and reasonably foreseeable future actions (see Table 5-1) and the KC-46A scenarios at Altus AFB. Table 5-2 provides a summary of the cumulative effects. As shown in Table 5-2, air quality, safety, biological resources, cultural resources, land use, hazardous materials and waste, and environmental justice and the protection of children are not anticipated to contribute to cumulative effects. Cumulative effects are discussed for noise, soils and water, infrastructure, and socioeconomics.

**Table 5-2. Summary of Cumulative Effects for Altus AFB**

Resource Area	KC-46A FTU Scenario <sup>a</sup>	KC-46A MOB 1 Scenario	Past, Present, and Foreseeable Actions	Cumulative Effects
Noise	■	■	■	■
Air Quality	■	■	■	○
Safety	■	■	■	○
Soils and Water	■	■	■	■
Biological Resources	○	○	■	○
Cultural Resources	■	■	■	○
Land Use	■	■	■	○
Infrastructure	■	●	■	■
Hazardous Materials and Waste	■	■	■	○
Socioeconomics	○	○	■	■
Environmental Justice and the Protection of Children	○	○	■	○

<sup>a</sup> KC-46A FTU scenario is considered under the Preferred Alternative.

**Key:** ○ – not affected or beneficial impacts, ■ – affected but not significant, short to medium term, impacts that range from low to high intensity,  
● – significant impacts, that are high in intensity or are long term.

#### 5.1.2.1 Noise

Implementation of the FTU or MOB 1 scenario would incrementally increase noise levels on and near Altus AFB. Noise impacts are described in Section 4.1.1.

Construction and demolition (C&D) activities in the vicinity of the project locations, in combination with C&D activities proposed as part of the Altus AFB General Plan (GP), are expected to result only in short-term intermittent increases in noise levels during that phase of work (Altus AFB 2009c).

Implementation of the proposed action would not be expected to result in any significant cumulative noise effects in combination with other past, present, or reasonably foreseeable actions.

#### 5.1.2.2 Soils and Water

The Altus General Plan Environmental Assessment (GPEA) identified one project (proposed construction activities associated with Runway 17L/35R) that had the potential for minor adverse impacts on floodplains. The GPEA concluded the action would only involve replacing the existing asphaltic cement surface of the runway with granitic concrete. During this activity, the existing elevations and floodplain environment would be preserved, allowing for no impact on the existing floodplain. Any potential impacts on floodplains are not anticipated to be significant and would be reduced to the maximum extent practicable through project design and implementation of environmental protection measures (Altus AFB 2009c). No other projects with potential soils and water impacts were identified at Altus AFB and no cumulative effects associated with soil and water resources are anticipated.

### *5.1.2.3 Infrastructure*

The FTU and MOB 1 scenarios would require additional facility C&D when considered in combination with the Altus AFB GP and the associated impacts identified in the Altus GPEA. The FTU would require the construction of new facilities, renovation/ alteration/additions to existing facilities, and demolition of facilities. The MOB 1 scenario would require more development than the FTU scenario.

The Altus GPEA analyzed a Potential Development Alternative (PDA) that was selected as the preferred alternative for future development at Altus AFB. The PDA represents a broader approach to base and mission development at Altus AFB. Under the PDA, Altus AFB would be developed up to 75 percent of its potential, which is a level substantially higher than the current development. This would equate to the development of approximately 384 acres of on-base land, resulting in approximately 695,538 square feet of additional facility space and 93 acres of additional impervious cover on the base (Altus AFB 2009c).

The potential for cumulative effects associated with conflicts between either of the KC-46A scenarios and proposed Installation Development Plan (IDP) projects at Altus AFB could be offset by coordinating and including the KC-46A mission in the USAF comprehensive planning process with Air Mobility Command (AMC). Not all of the projects proposed under the PDA are approved or funded and would not be completed in the same timeframe as the projects identified for either of the KC-46A scenarios. The total disturbance area associated with the FTU would be less than five acres, but the total disturbance area associated with the MOB 1 would be less than 80 acres. The impervious surface created as part of the FTU scenario would not be significant, but the impervious surface created for the MOB 1 scenario for aircraft parking could be significant if stormwater controls are not included in project designs and construction plans when included with other proposed base development.

All C&D activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related benefits would occur regardless of project location. Sound engineering and management practices would minimize the potential for cumulative effects during and following construction.

### *5.1.2.4 Socioeconomics*

Any present or future actions that would involve an in- or out-migration of people to the area would create a cumulative impact on housing, economic activity (in the form of construction, employment, and earnings), educational facilities and staffing, and public and base services. Construction activities typically provide a beneficial economic impact on the area but are short-term for the duration of the project. However, many short-term projects occurring throughout the years provide a cumulative beneficial economic impact over the long-term.

Regionally, Altus AFB is located in Jackson County adjacent to the City of Altus. These municipalities have comprehensive plans, capital improvement plans, transportation plans, and other plans that guide future development activities, including formal coordination with the base in the form of the Altus AFB Joint Land Use Study (JLUS), approved by the city and county in 1999. In accordance with the JLUS, the communities surrounding Altus AFB seek to avoid encroachment issues with the base through appropriate land use surrounding the base, zoning, building height restrictions, avoiding clear zone (CZ) and accident potential zone (APZ) areas, and minimizing residential and other incompatible development.

The Altus GPEA indicated that the PDA for the new development to support the increase in mission activities would also result in beneficial impacts on the local economy. Socioeconomic

benefits go beyond the direct change in military personnel and have an extended, or multiplier, effect upon regional employment and economic activity. Any new future missions required to support the FTU or MOB 1 scenario would require separate USAF comprehensive planning and NEPA analysis.

No major new or planned development activities were identified in the Altus area that could combine with the KC-46A beddown scenarios to potentially result in cumulative socioeconomic impacts. While it is unknown whether any of these jobs would involve new employees relocating to the Altus area, no significant adverse impacts are expected in combination with the KC-46A FTU or MOB 1 scenario.

### **5.1.3 Irreversible and Irretrievable Commitment of Resources**

The irreversible environmental changes that would result from implementation of the KC-46A FTU or MOB 1 scenario at Altus AFB involve the consumption of material resources and energy resources. The use of these resources is considered to be permanent. Irreversible and irretrievable resource commitments are related to the use of nonrenewable resources and the impacts that use of these resources will have on future generations. Irreversible impacts primarily result from use or destruction of a specific resource that cannot be replaced within a reasonable timeframe (e.g., energy and minerals). Irretrievable resource commitments also involve the loss in value of an affected resource that cannot be restored as a result of the action.

For the beddown of KC-46A aircraft at Altus AFB for either the FTU or MOB 1 scenario, most resource commitments are neither irreversible nor irretrievable. Most impacts are short term and temporary, such as air emissions from construction, or longer lasting but negligible, such as the construction of new homes to support new KC-46A personnel increases on base or in the local communities. Those limited resources that could involve a possible irreversible or irretrievable commitment would be used in a beneficial manner.

Construction and renovation of base facilities and infrastructure would require the consumption of limited amounts of material typically associated with interior renovations (wiring, insulation, windows, drywall) and exterior construction (concrete, steel, sand, mortar, brick, asphalt). An undetermined amount of energy to conduct renovation, construction, and operation of these facilities would be expended and irreversibly lost but would be used in an efficient and sustainable manner over the useful life cycle of the facilities.

Training operations would continue to involve the consumption of nonrenewable resources, such as gasoline used in vehicles and jet fuel used in the KC-46A aircraft and other aircraft while in flight. None of these activities are expected to significantly decrease the availability of minerals or petroleum resources. Personal vehicle use by the new personnel and those continuing to support the existing missions would consume fuel, oil, and lubricants. The amount of these materials used would increase slightly; however, this additional use is not expected to significantly affect the availability of the resources in the southwestern Oklahoma region or nationally.

## **5.2 FAIRCHILD AIR FORCE BASE (MOB 1) CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

### **5.2.1 Past, Present, and Reasonably Foreseeable Actions**

This section provides decision makers with the cumulative effects of the proposed KC-46A MOB 1 scenario at Fairchild AFB, as well as the incremental contribution of past, present, and reasonably foreseeable actions.

Table 5-3 summarizes past, present, and reasonably foreseeable actions within the region that could interact with the implementation of the KC-46A MOB 1 scenario at Fairchild AFB. The table briefly describes each identified action, presents the proponent or jurisdiction of the action and the timeframe (e.g., past, present/ongoing, future), and indicates which resources potentially interact with the proposed KC-46A MOB 1 scenario. No other actions were identified during the data gathering and field survey phases at Fairchild AFB for this EIS.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Fairchild AFB was constructed in 1942 and named the Spokane Air Depot while it served as a repair depot for damaged aircraft during World War II. The base has increased more than three times in size since its initial construction, and the facilities and infrastructure have undergone several major periods of construction and reconstruction to accommodate student training loads and new missions and commands (USAF 2012b). For most resource areas, such as soils and water, biological resources, infrastructure, and hazardous materials and waste, the impacts of past actions are now part of the existing environment and are incorporated in the description of the affected environment in Chapter 3.

**Table 5-3. Past, Present, and Reasonably Foreseeable Actions at Fairchild AFB and Associated Region**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions</b>				
Fairchild AFB General Plan 2010 (currently in the process of being updated to an Installation Development Plan in accordance with revised USAF Comprehensive Planning guidelines) (Fairchild AFB 2010a)	Air Mobility Command, Fairchild AFB	Present, future	The Fairchild GP has been developed to provide a strategy for the continued physical development of Fairchild AFB in support of the base's current air refueling mission and prospective additional missions. The GP provides a vision for future development of the base and considers creative solutions, as well as forthcoming challenges. It is a stand-alone document prepared to respond to the USAF's commitment to planning for future and sustainable development and protecting the environment.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics
Final Environmental Assessment of Installation Development at Fairchild Air Force Base, Washington (2013) (USAF 2012b)	Air Mobility Command, Fairchild AFB	Present, future	Fairchild AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing base development process. The proposed action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, community living upgrades, infrastructure improvements, recreational upgrades, natural infrastructure management, and strategic sustainability performance projects, that would be among those proposed to be completed or implemented during the next 5 years (from Fiscal Year 2013 to Fiscal Year 2018).	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics, Environmental Justice and the Protection of Children
Environmental Assessment, Demolition of Hangars, Fairchild Air Force Base, Washington (2012) (Fairchild AFB 2012d)	Air Mobility Command, Fairchild AFB	Present, future	The purpose of the proposed action is to comply with a USAF Headquarters directive, requiring bases to "reduce their physical infrastructure by 20 percent by 2020." Fairchild AFB is working toward this goal by finding excess space that is not economical to restore for other purposes and programming it for demolition. The proposed action will demolish 5 hangars on the airfield, leaving 18 hangars in place. The current missions at Fairchild AFB are authorized 7 hangars, so the proposed action would demolish 5 and leave 11 excess hangars on the airfield for future phases of demolition.	Cultural Resources, Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste
Environmental Assessment, Demolition of Munitions Area Storage Facilities, Fairchild AFB, Washington (Fairchild AFB 2011h)	Air Mobility Command, Fairchild AFB	Present, future	The purpose of this action is to demolish six facilities in the Munitions Storage Area at Fairchild AFB. These facilities were constructed between 1952 and 1956. Currently, these facilities are not considered mission critical and are empty or underutilized. The unique construction and infrastructure of these facilities, as well as their location in a limited access area, would make it difficult to rehabilitate or renovate these facilities for another purpose.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste
Environmental Assessment, Expansion of RV Storage Lot, Fairchild AFB, Washington (Fairchild AFB 2011i)	Air Mobility Command, Fairchild AFB	Present, future	The purpose of this action is to provide more parking to the RV Storage Lot, run -by Recreational Services. This service provides nearby parking of RVs for Airmen at Fairchild AFB at a lower rate than in the local area. The RV Storage Lot is located on the northwest side of Fairchild AFB behind the Petroleum, Oil, and Lubricants storage area.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste

**Table 5-3. Past, Present, and Reasonably Foreseeable Actions at Fairchild AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Non-Military Federal Actions</b>				
Final Environmental Impact Statement, Spokane Tribe of Indians, West Plains Casino and Mixed-Use Development Project, City of Airway Heights, Spokane County, Washington (BIA 2013)	Bureau of Indian Affairs (BIA) and the Spokane Tribe of Indians	Future	<p>The EIS has been prepared by the BIA as the lead Federal agency pursuant to the National Environmental Policy Act to assess the environmental effects of issuing a two-part determination under Section 20 of the Indian Gaming Regulatory Act (proposed action), and the subsequent proposed development discussed below. The purpose of the proposed action is to advance the BIA's "Self Determination" policy of promoting the tribe's self-governance capability, and to promote opportunities for economic development and self-sufficiency of the tribe and its members. The USAF was a cooperating agency in the development of the EIS.</p> <p>The Spokane Tribe of Indians is in the planning stages of developing the West Plains Casino and Mixed-Use Development Project. The tribe has identified a 145-acre site held in Federal Trust for the tribe in the City of Airway Heights, Spokane County, Washington. The proposed project site is located immediately northwest of the intersection of U.S. Highway 2 (U.S. 2) and Craig Road. The site is located approximately 1.5 miles east of the main entrance gate of Fairchild AFB on U.S. 2. The proposed project consists of the development of a casino-resort facility, a 300-room hotel, parking structure, site retail, commercial building, tribal cultural center, and police/fire station within the project site. Access to the project site would be provided along U.S. 2 and Craig Road.</p> <p>The project has been coordinated with the USAF. The Spokane Tribe of Indians has enacted the West Plains Development Code to implement recommendations of a JLUS to avoid incompatible development in the vicinity of Fairchild AFB. This code includes restrictions and requirements for building heights, density, sound attenuation, wildlife attractants, light and glare.</p>	Infrastructure, Socioeconomics

**Table 5-3. Past, Present, and Reasonably Foreseeable Actions at Fairchild AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>State and Local Actions</b>				
Fairchild Air Force Base Joint Land Use Study (JLUS) (2009) (Spokane County 2009)	Spokane County, Washington	Present, future	The JLUS is a collaborative land use planning effort involving a military base and adjacent local governments. The study evaluates the planning rationale necessary to support and encourage compatible land use development surrounding the base. Its purpose is to provide support to sustain and provide flexibility to military missions on the base while guiding the long-term land use needs of the neighboring counties and communities.	Noise, Land Use, Infrastructure, Socioeconomics
Spokane Metropolitan Planning Area 2011–2035 Metropolitan Transportation Plan (City of Spokane 2012)	City of Spokane, Washington Spokane Regional Transportation Council	Present, future	The Metropolitan Transportation Plan is a long-range, multimodal plan that provides a blueprint to address transportation issues and needs through the year 2035. All major transportation modes are incorporated into the plan, including highways and streets, public transportation, airports, freight and goods movement, and bicycle and pedestrian transportation.	Land Use, Infrastructure, Socioeconomics
Washington State Department of Transportation 2012–2015 State Transportation Improvement Program (WA DOT 2012)	Washington State Department of Transportation	Present, future	The 2012–2015 State Transportation Improvement Program is a 4-year, fiscally constrained prioritized program of transportation projects, compiled from local and regional plans, along with the Washington Transportation Plan. These projects have been identified through state, regional, and local planning processes as the highest priority for the available funding to preserve and improve the state's transportation network.	Land Use, Infrastructure, Socioeconomics

## 5.2.2 Cumulative Effects

This section evaluates the cumulative effects from the past, present, and reasonably foreseeable future actions (see Table 5-3) and the KC-46A scenario at Fairchild AFB. Table 5-4 provides a summary of the cumulative effects. As shown in Table 5-4, air quality, safety, soils and water, biological resources, hazardous materials and waste, and environmental justice and protection of children are not anticipated to contribute to cumulative effects. Cumulative effects are discussed for noise, cultural resources, land use, infrastructure, and socioeconomics.

**Table 5-4. Summary of Cumulative Effects for Fairchild AFB**

Resource Area	KC-46A MOB 1 Scenario	Past, Present, and Foreseeable Actions	Cumulative Effects
Noise	■	■	■
Air Quality	■	■	○
Safety	■	■	○
Soils and Water	■	■	○
Biological Resources	○	■	○
Cultural Resources	■	■	■
Land Use	■	■	■
Infrastructure	■	■	■
Hazardous Materials and Waste	■	■	○
Socioeconomics	○	■	■
Environmental Justice and the Protection of Children	■	■	○

**Key:** ○ – not affected or beneficial impacts, ■ – affected but not significant, short to medium term, impacts that range from low to high intensity, ● – significant impacts, that are high in intensity or are long term.

### 5.2.2.1 Noise

Under the MOB 1 scenario, noise levels on and near the base would increase slightly. Only short-term, minor, adverse impacts would occur during the construction phase of other military actions identified in Table 5-3. Because the resulting impacts would be low in intensity and short-term, they would not contribute to a significant cumulative effect.

### 5.2.2.2 Cultural Resources

Fairchild AFB, in coordination with the Washington State Historic Preservation Office (SHPO) (Department of Archaeology and Historic Preservation [DAHP]), developed a Memorandum of Agreement (MOA) for the demolition of flightline structures eligible for listing in the National Register of Historic Places (NRHP). In accordance with the MOA, the USAF would ensure that stipulations listed in the MOA are implemented for demolition of historic structures to mitigate adverse impacts.

As discussed in Chapter 4, implementation of the MOB 1 scenario at Fairchild AFB would adversely impact one building eligible for the NRHP. Fairchild AFB has amended the existing MOA and has agreed to mitigate any adverse impacts created by the demolition of the NRHP-eligible building, should Fairchild AFB be selected for the MOB 1 mission.

Demolition projects proposed along the flightline would contribute to cumulative effects on cultural resources (Fairchild AFB 2012d; USAF 2012b). Although the demolitions would be an adverse effect, completion of actions required by the MOA would minimize the potential for cumulative effects to cultural resources.

### 5.2.2.3 *Land Use*

Implementation of the MOB 1 scenario would result in low intensity impacts from increased number of air operations because of existing incompatible residential and unspecified commercial and industrial zoning in the APZs. Continued coordination with local zoning authority to refine land use restrictions in airport overlay district would reduce the potential for cumulative effects therefore there would be no significant cumulative effects on land use.

Encroachment by potentially incompatible land use from the past, present, and reasonably foreseeable future projects (included in Table 5-3) have potential to additionally contribute to cumulative land use impacts. Fairchild AFB would need to continue coordinating with Spokane County, local municipalities, the Spokane Tribe, and developers to adopt planning and zoning regulations that ensure compatibility between local development and the USAF mission and minimize cumulative land use effects.

### 5.2.2.4 *Infrastructure*

The new MOB 1 scenario proposed for Fairchild AFB would require additional facility C&D above what was included in the existing Fairchild AFB GP, the associated impacts identified in the Fairchild AFB IDEA, and other recent infrastructure-type NEPA actions proposed for Fairchild AFB in Table 5-3. The projects identified in the Fairchild AFB GP and the other proposed infrastructure projects include new construction, infrastructure improvements, natural infrastructure management, strategic sustainability performance, and demolition of facilities (USAF 2012b). The potential for cumulative effects associated with conflicts between the MOB 1 scenario and proposed IDP projects at Fairchild AFB can be off-set by coordinating and including the proposed mission in the USAF comprehensive planning process with AMC.

All C&D activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related benefits would occur regardless of project location and are not constraints to base development or contributions to significant cumulative effects. Sound engineering and management practices would minimize the potential for cumulative effects during and following construction. Additional impervious surface on the base from the proposed Fairchild AFB GP and other infrastructure projects would require appropriate stormwater system improvements.

The personnel increase during the long-term operational phase, as discussed in Chapter 4, would not contribute to significant cumulative effects because the local and regional road network would have sufficient capacity. Traffic associated with implementation of the proposed West Plains Casino and Mixed-Use Development Project has the potential to combine with the construction and mission personnel traffic and could result in the potential for impacts on vehicular transportation roadway network traffic and circulation patterns in the immediate area of the proposed casino development site and Fairchild AFB. The severity of the impacts would depend on the traffic mix of the base and the proposed casino during peak hour periods. The BIA EIS projected that the proposed casino would result in significant cumulative traffic and circulation impacts on roadways and intersections in the forecast year of 2032 without mitigation measures. The impacts would include the potential to impact traffic to and from the base and traffic in general for all base personnel and their dependents. The BIA EIS identified a number of mitigation measures to reduce significant cumulative traffic and circulation impacts. Based on an Intergovernmental Agreement among the Spokane Tribe of Indians, the City of Airway Heights, and Spokane County, the tribe developed a Traffic Impact Analysis that includes a number of roadway and intersection improvement projects to improve traffic capacity, circulation, flow, and efficiency through the maximum casino complex build-out phase in 2019 (BIA 2013).

#### 5.2.2.5 *Socioeconomics*

Any present or future actions that would involve an in- or out-migration of people to the area would create a cumulative impact on housing, economic activity (in the form of construction, employment, and earnings), educational facilities and staffing, and public and base services. Construction activities typically provide a beneficial economic impact on the area but are short-term for the duration of the project. However, many short-term projects occurring throughout the years provide a cumulative beneficial economic impact over the long-term.

The proposed West Plains Casino and Mixed-Use Development Project has the potential to combine with the KC-46A MOB 1 scenario to result in both beneficial and potential adverse cumulative socioeconomic effects. The BIA EIS estimates that the proposed casino complex would create approximately 2,805 jobs, generate \$141.2 million in annual revenues, and attract 2,823,056 patrons annually under full build-out conditions associated with the maximum build alternative (i.e., Alternative 1) (BIA 2013). The KC-46A MOB 1 scenario and the proposed West Plains Casino and Mixed-Use Development Project, in combination, would add substantial new direct and indirect revenue-generating capacity to regional municipalities and Spokane County.

If a large number of relocations were associated with the proposed casino complex, there could be a shortage of suitable housing. Personnel and families associated with the proposed MOB 1 scenario would require on- or off-base housing. However, for the proposed casino complex, it is anticipated that the majority of employees would come from the Spokane County region and that a large relocation of employees would not occur. Therefore, existing housing would be adequate, resulting in no cumulative contribution.

Strategies to minimize cumulative effects to socioeconomics could include implementation of comprehensive plans, capital improvement plans, transportation plans, and other plans that guide future development activities, including formal coordination with the base in the form of a JLUS between the base and Spokane County.

### **5.2.3 Irreversible and Irretrievable Commitment of Resources**

The irreversible environmental changes and irretrievable commitment of resources that would result from implementation of the new scenario at Fairchild AFB would be similar in nature and have similar characteristics to those identified for Altus AFB in Section 5.1.3.

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### **5.3 GRAND FORKS AIR FORCE BASE (MOB 1) CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

#### **5.3.1 Past, Present, and Reasonably Foreseeable Actions**

This section provides decision makers with the cumulative effects of the proposed KC-46A MOB 1 scenario at Grand Forks AFB, as well as the incremental contribution of past, present, and reasonably foreseeable actions.

Table 5-5 summarizes past, present, and reasonably foreseeable actions within the region that could interact with implementation of the KC-46A MOB 1 scenario at Grand Forks AFB. The table briefly describes each identified action, presents the proponent or jurisdiction of the action and the timeframe (e.g., past, present/ongoing, future), and indicates which resources could potentially interact with the proposed new KC-46A MOB 1 scenario at Grand Forks AFB. No other actions were identified during the data gathering and field survey phases at Grand Forks AFB for this EIS.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Grand Forks AFB was established in 1954 when the USAF announced plans to build an Air Defense Command fighter-interceptor base in eastern North Dakota. The 2005 Base Realignment and Closure (BRAC) directed the realignment of all KC-135 aircraft to other AFBs. In December 2010, Air Combat Command initiated RQ-4 Global Hawk operations and the 119th Air Base Wing (ABW) initiated MQ-1 Predator operations in fulfillment of the 2005 BRAC recommendation for future operations at Grand Forks AFB (Grand Forks AFB 2010b). For most resource areas, such as soils and water, biological resources, infrastructure, and hazardous materials and waste, the impacts of past actions are now part of the existing environment and are incorporated in the description of the affected environment in Chapter 3.

**Table 5-5. Past, Present, and Reasonably Foreseeable Actions at Grand Forks AFB and Associated Region**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions</b>				
FY 2013–FY 2014 Project List, 319th Civil Engineering Center, Grand Forks AFB (Grand Forks AFB 2013a)	Air Mobility Command, Grand Forks AFB	Present, future	The Fiscal Year 2013–Fiscal Year 2014 Project List includes project number, title, status, and programmed amounts for 76 projects.	Infrastructure
Capital Improvements Plan, Grand Forks AFB, Fiscal Year 2014–Fiscal Year 2024 (Grand Forks AFB 2013b)	Air Mobility Command, Grand Forks AFB	Present, future	The Capital Improvements Plan for Grand Forks AFB during FY 2014–FY 2024 includes program, title, and scope for 49 projects.	Infrastructure
Unmanned Aircraft Systems Technology Park and Training Program, Enhanced Use Lease Project at Grand Forks AFB, North Dakota (Grand Forks AFB 2013c)	Grand Forks Base Realignment Impact Committee, University of North Dakota, University of North Dakota Aerospace Foundation, Northland Aerospace Foundation, and Northrup Grumman	Present, future	The Unmanned Aircraft Systems (UAS) technology park would support the base’s UAS activities, which are conducted by the USAF, the North Dakota Air National Guard, and the U.S. Customs and Border Protection. Northrup Grumman, which has an office in Grand Forks, manufactures the RQ-4 Global Hawk reconnaissance aircraft system, which is flown from the base. These assets would train in Special Use Airspace (SUA) and utilize R-5401/Camp Grafton South, North Dakota. In order to provide adequate training airspace, new SUA Restricted Areas (RAs) or other suitable airspace as determined by FAA would be established.	Noise, Safety, Land Use, Infrastructure, Socioeconomics
Final Environmental Assessment Addressing the Privatization of Military Family Housing at Grand Forks AFB, North Dakota (Grand Forks AFB 2011d)	Air Mobility Command, Air Force Civil Engineer Center, Grand Forks AFB	Present, future	The purpose of the proposed action is to vest responsibility in a private developer for military family housing at Grand Forks AFB. The need for the proposed action is to provide affordable, quality housing and ancillary facilities to military members and their families through demolition of surplus, inadequate units and renovation of existing family housing units so that they meet current USAF standards. The goal of the Northern Military Housing Privatization Initiative is to provide uniformed services members and their families access to safe, secure, quality, affordable, well-maintained housing in a military community where they choose to live.	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics

**Table 5-5. Past, Present, and Reasonably Foreseeable Actions at Grand Forks AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions (Continued)</b>				
Final Environmental Assessment of Installation Development at Grand Forks AFB, North Dakota (Grand Forks AFB 2010b)	Air Mobility Command, Grand Forks AFB	Present, future	The 319th Air Refueling Wing (ARW) at Grand Forks AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing base development process. The proposed action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, community living upgrades, infrastructure improvements, recreational upgrades, natural infrastructure management, and strategic sustainability performance projects that would be among those proposed to be completed or implemented during the next 5 years (from Fiscal Year 2010 to Fiscal Year 2014).	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics, Environmental Justice and the Protection of Children
Final Environmental Impact Statement for the Base Realignment and Closure Beddown and Flight Operations for Remotely Piloted Aircraft at Grand Forks AFB, North Dakota (USAF 2010c)	Air Mobility Command, Grand Forks AFB	Present, future	The EIS analyzes the potential environmental consequences of a proposal to beddown, or locate, remotely piloted aircraft (RPA) at Grand Forks AFB. These assets would train in SUA and utilize R-5401/Camp Grafton South, North Dakota. To provide adequate training airspace, new SUA Restricted Areas would be established.	Noise, Safety, Land Use, Hazardous Materials and Waste, Socioeconomics
Final Environmental Assessment, Proposed Demolition of 35 Buildings Within the Munitions Storage Area at Grand Forks AFB, North Dakota (Grand Forks AFB 2008c)	Air Mobility Command, Air Force Civil Engineer Center, Grand Forks AFB	Present, future	The environmental assessment was prepared to evaluate the potential impacts of demolishing 35 buildings within the munitions storage area at Grand Forks AFB in Grand Forks County, North Dakota. The objective of the proposed action is to reduce the amount of funds currently being spent to maintain these vacant and unused buildings, and remove a potential asbestos risk.	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste
Grand Forks AFB, North Dakota General Plan (GP) (Grand Forks AFB 2006a)	Air Mobility Command, Grand Forks AFB	Present, future	The Grand Forks AFB GP guides base development according to a plan that maximizes economic, physical, and human resources and fulfills those objectives and offers guidelines for enhancing base land use, transportation, and the quality of life. This plan provides decision makers and technical staff with the best possible guidelines for planning, programming, designing, and constructing base facilities to achieve a well-planned and -constructed base. Conscientious planning ensures efficient use of resources and promotes mission success.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics

**Table 5-5. Past, Present, and Reasonably Foreseeable Actions at Grand Forks AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions (Continued)</b>				
Final Environmental Assessment, Demolition of Alpha Ramp at Grand Forks AFB, North Dakota (Grand Forks AFB 2006c)	Air Mobility Command, U.S. Army Corps of Engineers, Grand Forks AFB	Present, future	This environmental assessment was prepared to remove the A-Ramp facilities and infrastructure that are no longer needed; to remove excess buildings and utilities that represent sources of potential contamination; and to remove excess buildings and facilities (including walls) that are in the 7:1 flight envelope, clear zone, and 50:1 approach-departure clearance zone and require flightline waivers.	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Hazardous Materials and Waste
<b>Non-Military Federal Actions</b>				
Proposed Action and Air Force Form 813 to relocate CBP personnel and aircraft from Grand Forks International Airport to Grand Forks AFB (Grand Forks AFB 2013d)	Department of Homeland Security, Customs and Border Protection	Future	The U.S. Department of Homeland Security Customs and Border Protection (CBP) has submitted a basing action request to relocate 2 aircraft (1 fixed-wing/ 1 rotary wing) and approximately 24 additional personnel from Grand Forks International Airport to Grand Forks AFB. The current CBP tenant mission is located in Building 541 and includes approximately 32 personnel and use of the MQ-9 Reaper to patrol the northern border.	Noise, Air Quality, Safety, Infrastructure
<b>State and Local Actions</b>				
Center to Grand Forks 345 kV Transmission Line Project, Minnkota Power Cooperative, Inc. (MPC 2013)	Minnkota Power Cooperative, Inc.	Present, future	Minnkota Power Cooperative, Inc. has started construction on a new transmission line to meet long-term load growth needs. The Center to Grand Forks Project helps to address the long-standing need to improve voltage support in the northern Red River Valley region. The project consists of approximately 250 miles of new, high-voltage (345-kV) alternating current transmission line from the existing Center 345-kV substation at the Milton R. Young Station located about 4.5 miles southeast of the town of Center, N.D., in Oliver County, to the existing Prairie substation located on the western boundary of the City of Grand Forks, N.D., in Grand Forks County.	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics

**Table 5-5. Past, Present, and Reasonably Foreseeable Actions at Grand Forks AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>State and Local Actions (Continued)</b>				
City of Grand Forks, North Dakota, Year 2040 Land Use Plan (City of Grand Forks 2011)	City of Grand Forks, North Dakota	Present, future	The Year 2040 Land Use Plan is an update to previous plans. The plan addresses Grand Forks' jurisdictional area in the form of specific land use goals and policies. The goals and policies provide the framework that can be utilized to guide the physical growth of Grand Forks through the next three decades. Also included in the plan is a map depicting the physical growth of the city by the land use types to the year 2040. The entire Year 2040 Land Use Plan includes six sections: Existing Community; Existing Land Use; Goals, Objectives and Policies; Future Land Use; Urban Design; and Land Use and the Implementation Program.	Land Use, Infrastructure, Socioeconomics
Grand Forks-East Grand Forks, 2035 Long-Range Transportation Plan (GFMPO 2007)	Grand Forks-East Grand Forks Metropolitan Planning Organization	Present, future	The Long-Range Transportation Plan is a long-range, multimodal plan that provides a blueprint to address transportation issues and needs through the year 2035. All major transportation modes are incorporated into the plan, including highways and streets, public transportation, airports, freight and goods movement, and bicycle and pedestrian transportation.	Land Use, Infrastructure, Socioeconomics
Grand Forks-East Grand Forks, Transportation Improvement Program, North Dakota Side, Fiscal Years 2013–2016 (GFMPO 2013)	Grand Forks-East Grand Forks Metropolitan Planning Organization	Present, future	The Final North Dakota Side Transportation Improvement Program (TIP) for the Grand Forks-East Grand Forks area lists the significant transportation system improvements to be implemented during the next 4 years. The 2013–2016 TIP is submitted under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users.	Land Use, Infrastructure, Socioeconomics
North Dakota Department of Transportation 2012–2015 State Transportation Improvement Program (NDDOT 2012)	North Dakota Department of Transportation	Present, future	The 2012–2015 State Transportation Improvement Plan is a 4-year, fiscally constrained prioritized program of transportation projects, compiled from local and regional plans, along with the North Dakota Transportation Plan. These projects have been identified through state, regional, and local planning processes as the highest priority for the available funding to improve the state's transportation network.	Land Use, Infrastructure, Socioeconomics
North Dakota State Rail Plan, Upper Great Plains Transportation Institute, North Dakota Department of Transportation (NDDOT 2007)	Upper Great Plains Transportation Institute, North Dakota Department of Transportation	Present, future	This document is an update of the North Dakota State Rail Plan that was published in 1998. It provides information and guidance for state and local officials, rail users, and others affected by railroad transportation and serves as a guide for state investments in eligible rail lines and related projects.	Land Use, Infrastructure, Socioeconomics

### 5.3.2 Cumulative Effects

This section evaluates the cumulative effects from the past, present, and reasonably foreseeable future actions (see Table 5-5) and the KC-46A scenarios at Grand Forks AFB. Table 5-6 provides a summary of the cumulative effects. As shown in Table 5-6, air quality, safety, soils and water, cultural resources, land use, hazardous materials and waste, and environmental justice and protection of children are not anticipated to contribute to cumulative effects. Cumulative effects are discussed for noise, biological resources, infrastructure, and socioeconomics.

**Table 5-6. Summary of Cumulative Effects for Grand Forks AFB**

Resource Area	KC-46A MOB 1 Scenario	Past, Present, and Reasonably Foreseeable Actions	Cumulative Effects
Noise	■	■	■
Air Quality	■	■	○
Safety	■	■	○
Soils and Water	■	■	○
Biological Resources	■	■	■
Cultural Resources	○	■	○
Land Use	■	■	○
Infrastructure	■	■	■
Hazardous Materials and Waste	■	■	○
Socioeconomics	○	■	■
Environmental Justice and the Protection of Children	○	■	○

**Key:** ○ – not affected or beneficial impacts, ■ – affected but not significant, short to medium term, impacts that range from low to high intensity, ● – significant impacts, that are high in intensity or are long term.

#### 5.3.2.1 Noise

The existing noise environment at Grand Forks AFB includes remotely piloted aircraft (RPA) operations (USAF 2010c). The addition of KC-46A aircraft to Grand Forks AFB is not anticipated to result in significant cumulative noise effects.

Noise impacts associated with construction and other actions described in Table 5-5 would be temporary and localized. Although these actions could occur in the same timeframe as actions proposed under the MOB 1 scenario, cumulative noise effects would not be expected to be significant. Other military actions identified in Table 5-5 would have similar contributions to cumulative noise levels.

#### 5.3.2.2 Biological Resources

There is the potential for up to 2 acres of wetlands to be impacted by construction activities associated with the KC-46A MOB 1 scenario. Section 404 and 401 permits and mitigation could potentially be required prior to construction. There is the potential for minor, adverse, cumulative effects on wetlands with other proposed actions in Table 5-5.

- *Final Environmental Assessment of Installation Development at Grand Forks Air Force Base, North Dakota* (Grand Forks AFB 2010b) – This action includes minor, direct adverse impacts on wetlands from the proposed projects to construct base civil engineering pavements and maintenance facility/snow barn and to construct an indoor small arms range. However, potential cumulative effects on wetlands would not be considered significant and would be reduced to the maximum extent practicable through

project design and implementation of environmental protection measures, permits, and coordination with the appropriate Federal and State of North Dakota natural resource agencies.

- *Final Environmental Assessment, Proposed Demolition of 35 Buildings within the Munitions Storage Area* – This action required the taking of 1.3 acres of wetlands that were fully mitigated via a regional wetland bank or at a suitable location on base.
- *Final Environmental Assessment, Demolition of Alpha Ramp* – This action required the taking of 3.9 acres of wetlands that were fully mitigated via a regional wetland bank or at a suitable location on base.

#### 5.3.2.3 *Infrastructure*

The proposed KC-46A MOB 1 scenario would require additional facility C&D when considered in combination with the existing Grand Forks AFB GP, the associated impacts identified in the Grand Forks IDEA, and the other infrastructure-type NEPA actions at Grand Forks AFB in Table 5-5. The projects identified in the Grand Forks AFB GP and the other proposed infrastructure projects include new construction, infrastructure improvements, natural infrastructure management, strategic sustainability performance, and demolition of facilities (Grand Forks AFB 2010b). The potential for cumulative effects associated with conflicts between the KC-46A MOB 1 scenario and proposed GP projects at Grand Forks AFB can be offset by coordinating and including the KC-46A MOB 1 scenario in the USAF comprehensive planning process with AMC. Not all of the projects proposed in the GP are approved or funded, and these projects would not be completed in the same timeframe as the projects identified for the KC-46A MOB 1 mission.

All C&D activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related benefits would occur regardless of project location and are not constraints to base development or contributions to significant cumulative effects. Sound engineering and management practices would minimize the potential for cumulative effects during and following construction. Additional impervious surface on the base from the proposed Grand Forks AFB GP and other infrastructure projects would require appropriate stormwater system improvements.

Implementation of the KC-46A scenario would result in short-term, impacts during the construction phase that would be avoided or reduced through the use of a construction management plan for vehicle safety, traffic, and circulation. During the long-term operational phase, the MOB 1 scenario would bring 4,526 additional personnel to Grand Forks AFB, most of whom would be military personnel and their dependents. Regional access roads and the on-base road network have adequate capacity to absorb the additional traffic without major impacts on traffic flow, circulation, or level of service for the proposed personnel increase. These short-term and long-term impacts would therefore not significantly contribute to cumulative impacts.

#### 5.3.2.4 *Socioeconomics*

Any present or future actions that would involve an in- or out-migration of people to the area would create a cumulative impact on housing, economic activity (in the form of construction, employment, and earnings), educational facilities and staffing, and public and base services. Construction activities typically provide a beneficial economic impact on the area but are short-term for the duration of the project. However, many short-term projects occurring throughout the years provide a cumulative beneficial economic impact over the long-term.

Strategies to minimize cumulative effects on socioeconomics could include implementation of comprehensive plans, capital improvement plans, transportation plans, and other plans and coordination efforts that guide future development activities (some of which are included in Table 5-5).

### **5.3.3 Irreversible and Irretrievable Commitment of Resources**

The irreversible environmental changes and irretrievable commitment of resources that would result from implementation of the KC-46A MOB 1 scenario at Grand Forks AFB would be similar in nature and have similar characteristics to those identified for Altus AFB in Section 5.1.3.

## **5.4            McCONNELL AIR FORCE BASE (FTU OR MOB 1) CUMULATIVE EFFECTS AND IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES**

### **5.4.1           Past, Present, and Reasonably Foreseeable Actions**

This section provides decision makers with the cumulative effects of the proposed FTU or MOB 1 scenario at McConnell AFB, as well as the incremental contribution of past, present, and reasonably foreseeable actions.

Table 5-7 summarizes past, present, and reasonably foreseeable actions within the region that could interact with implementation of the KC-46A FTU or MOB 1 scenario at McConnell AFB. The table briefly describes each identified action, presents the proponent or jurisdiction of the action and the timeframe (e.g., past, present/ongoing, future), and indicates which resources potentially interact with the KC-46A scenarios at McConnell AFB. No other actions were identified during the data gathering and field survey phases at McConnell AFB for this EIS.

Past activities are those actions that occurred within the geographic scope of cumulative effects that have shaped the current environmental conditions of the project area. Military operations at Wichita Municipal Airport, which became McConnell AFB, began in the early 1940s; McConnell AFB became a permanent military base in 1953.

**Table 5-7. Past, Present, and Reasonably Foreseeable Actions at McConnell AFB and Associated Region**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions</b>				
Proposed Action and AF 813 Form to Demolish Building 1110 and repair HVAC in Buildings 1112 and 1166 (McConnell AFB 2013d)	Air Mobility Command, McConnell AFB	Present, Future	This AF 813 Form recommended a Categorical Exclusion (CATEX) for the demolition of Building 1110. This CATEX was based on a determination that according to 32 CFR Part 989 Appendix B, exclusion A2.3.11 states that “actions similar to other actions which have been determined to have an insignificant impact in a similar setting as established in an EIS or EA resulting in a FONSI.” This determination was based on the IDEA conducted in May 2007 examining the demolition of almost 30 buildings, which resulted in a Finding of No Significant Impact. This demolition and heating, ventilation, and air conditioning (HVAC) repair projects were determined to be similar and less likely to result in an environmental impact; therefore, a CATEX was signed.	Noise, Air Quality, Safety, Soils and Water, Cultural Resources, Land Use, Hazardous Materials and Waste
Environmental Impact Statement for the Main Operating Base 2 (MOB 2) for the Beddown of the KC-46A Tanker Aircraft (ANG 2013)	National Guard Bureau, Air National Guard	Present, Future	<p>This EIS is evaluating the potential environmental consequences of various alternatives of bedding down KC-46A tanker aircraft, associated infrastructure, and personnel in support of the MOB 2 at existing Air National Guard (ANG) bases within the continental United States (CONUS). The MOB 2 would consist of one squadron of 12 KC-46A aircraft. The KC-46A would continue supporting the mission of providing worldwide refueling, cargo, and aeromedical evacuation support. The proposed basing alternatives for MOB 2 include:</p> <ul style="list-style-type: none"> <li>• 190 ARW, Forbes Field, Kansas</li> <li>• 108 Wing, Joint Base McGuire-Dix-Lakehurst, New Jersey</li> <li>• 157 ARW, Pease AGS, New Hampshire</li> <li>• 171 ARW, Pittsburgh AGS, Pennsylvania</li> <li>• 121 ARW, Rickenbacker AGS, Ohio</li> </ul> <p>The specific focus of this reasonably foreseeable action is the 190 ARW at Forbes Field, which coincides with both the FTU and MOB 1 scenarios proposed for McConnell AFB. KC-46A aircrews associated with the FTU scenario would also utilize Forbes Field for training exercises. (See Section 2.4.4.2.4, Auxiliary Airfields).</p>	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics, Environmental Justice and the Protection of Children

**Table 5-7. Past, Present, and Reasonably Foreseeable Actions at McConnell AFB and Associated Region (Continued)**

Action	Proponent/ Location	Timeframe	Description	Resource Interaction
<b>Military Actions (Continued)</b>				
Installation Development Plan, McConnell AFB (McConnell AFB 2011a)	Air Mobility Command, McConnell AFB	Present, future	The McConnell AFB Installation Development Plan (IDP) has been developed to provide a strategy for the continued physical development of McConnell AFB in support of the base's current air refueling mission and prospective additional missions. The IDP provides a vision for future development of the base and considers creative solutions, as well as forthcoming challenges. It is a stand-alone document prepared to respond to the USAF's commitment to planning for future and sustainable development and protecting the environment.	Soils and Water, Land Use, Infrastructure, Hazardous Materials and Waste, Socioeconomics
Final Environmental Assessment of Installation Development at McConnell AFB (USAF 2012e)	Air Mobility Command, McConnell AFB	Present, future	McConnell AFB seeks to improve its understanding of the potential environmental consequences associated with the continuing base development process. The proposed action is to implement a range of selected projects, such as demolition of aging facilities, new facility construction, facility upgrades, facility repair and renovation, utilities upgrades, community living upgrades, infrastructure improvements, recreational upgrades, natural infrastructure management, and strategic sustainability performance projects that would be among those proposed to be completed or implemented during the next 5 years (from Fiscal Year 2012 to Fiscal Year 2017).	Noise, Air Quality, Safety, Soils and Water, Biological Resources, Cultural Resources, Land Use, Infrastructure, Transportation, Hazardous Materials and Waste, Socioeconomics, Environmental Justice and the Protection of Children
<b>State and Local Actions</b>				
McConnell AFB Joint Land Use Study (JLUS) (McConnell AFB 2005)	Cities of Derby and Wichita and Sedgwick County, Kansas	Present, future	The JLUS is a collaborative land use planning effort involving a military base and adjacent local governments. The study evaluates the planning rationale necessary to support and encourage compatible land use development surrounding the base. Its purpose is to provide support to sustain and provide flexibility to military missions on the base while guiding the long-term land use needs of the neighboring counties and communities.	Noise, Land Use, Infrastructure, Socioeconomics
City of Wichita, Kansas Capital Improvement Plan, 2011–2020 (City of Wichita 2009)	City of Wichita, Kansas	Present, future	The Capital Improvement Program budget document provides an overall 10-year plan for capital assets, as well as a 10-year plan to finance those projects. Summary information includes estimated expenditures, revenues, debt service, and total debt.	Land Use, Infrastructure, Socioeconomics
Wichita Transportation Improvement Program (WAMPO 2012)	Wichita Area Metropolitan Planning Organization	Present, future	The Transportation Improvement Program is a short-range program that identifies transportation projects to be implemented in the Wichita Area Metropolitan Planning Organization region from 2012–2016. All projects in this region that use Federal transportation funds and/or have regional significance are required to be included in the Transportation Improvement Plan.	Land Use and Recreation, Infrastructure, Socioeconomics

### 5.4.2 Cumulative Effects

This section evaluates the cumulative effects from the past, present, and reasonably foreseeable future actions (see Table 5-7) and the KC-46A scenarios at McConnell AFB. Table 5-8 provides a summary of the cumulative effects. As shown in Table 5-8, air quality, soils and water, safety, biological resources, hazardous materials and waste, and environmental justice and protection of children are not anticipated to contribute to cumulative effects.

**Table 5-8. Summary of Cumulative Effects for McConnell AFB**

Resource Area	KC-46A FTU Scenario	KC-46A MOB 1 Scenario <sup>a</sup>	Past, Present, and Reasonably Foreseeable Actions	Cumulative Effects
Noise	■	○	■	■
Air Quality	■	■	■	○
Safety	■	■	■	○
Soils and Water	■	■	■	○
Biological Resources	○	○	■	○
Cultural Resources	○	■	■	■
Land Use	■	■	■	■
Infrastructure	■	■	■	■
Hazardous Materials and Waste	■	■	■	○
Socioeconomics	○	■	■	■
Environmental Justice and the Protection of Children	■	■	■	○

<sup>a</sup> KC-46A MOB 1 scenario is considered under the Preferred Alternative.

**Key:** ○ – not affected or beneficial impacts, ■ – affected but not significant, short to medium term, impacts that range from low to high intensity,  
● – significant impacts, that are high in intensity or are long term.

#### 5.4.2.1 Noise

The existing noise environment at McConnell AFB includes KC-135 operations. Implementation of the FTU or MOB 1 scenario at McConnell AFB is not anticipated to result in significant cumulative noise effects.

C&D activities in the vicinity of the proposed project locations, in combination with C&D activities proposed as part of the McConnell AFB IDP, are expected to result only in short-term intermittent increases in noise levels during that phase of work (USAF 2012e). These noise impacts would not be expected to result in significant noise impacts when taken in conjunction with actions taken as part of the KC-46A FTU or MOB 1 scenario.

The National Guard Bureau is preparing a separate EIS that will support an independent decision to beddown 12 KC-46A aircraft at a second MOB (MOB 2). One of the locations being considered for the MOB 2 is Forbes Field (FOE), Kansas. This action is separate and independent from the FTU and MOB 1 actions that will result from this Final EIS; however, this action is considered in cumulative effects as addressed in Table 5-7.

Under the FTU scenario, the active-duty FTU would conduct approximately 977 airfield operations per year at FOE. In the context of the 24,742 airfield operations currently ongoing at FOE, this addition would be expected to result in an increase in day-night average sound level (DNL) of less than 0.2 decibels (dB) (see Volume II, Appendix B, Section B.1.3.2). If the Air National Guard (ANG) were to beddown MOB 2 at FOE, noise from the FTU scenario aircraft operations would be additive to noise generated by MOB 2. KC-46A noise is similar in type and intensity to the aircraft currently operating at FOE. In this context, KC-46A FTU scenario

auxiliary field operations would comprise a small fraction of overall operations. Noise impacts of the KC-46A FTU scenario operations would not be expected to contribute to significant cumulative noise effects at FOE.

#### *5.4.2.2 Cultural Resources*

None of the buildings proposed to support the FTU scenario at McConnell AFB are considered eligible for listing on the NRHP, and therefore would not contribute to cumulative effects. Three buildings associated with the MOB 1 scenario are considered eligible for listing on the NRHP: 1106, 1107 and 1218. Demolition of Building 1106 would result in an adverse impact.

The McConnell AFB IDP environmental assessment, as described in Table 5-7, evaluated the proposed action to determine potential impacts to archeological sites, historic facilities or districts, and traditional cultural properties. The projects identified in the environmental assessment would not result in adverse impacts and therefore would not contribute to cumulative cultural resource impacts in combination with the KC-46A FTU or MOB 1 scenarios.

While there are no known future actions that have the potential to contribute to cumulative cultural resource impacts at McConnell AFB, past actions (such as the mitigated demolition of historical structures) have resulted in minor, adverse cultural impacts. These actions taken with the current impacts relating to the KC-46A MOB 1 scenario have a potential to cause minor cumulative effects to cultural resources. McConnell AFB and the Kansas SHPO have signed a MOA agreeing to measures that mitigate the adverse effect on historic properties that would result from selection of McConnell AFB for the MOB 1 scenario. This MOA would also minimize potential cumulative effects.

#### *5.4.2.3 Land Use*

Implementation of various plans and projects listed in Table 5-7, in conjunction with the KC-46A scenarios, would result in compatible development within the base. Aircraft operations would continue to affect incompatible development that currently occurs within APZ I and APZ II, resulting in a contribution to cumulative land use impacts. Coordination between McConnell AFB and the Cities of Derby and Wichita would continue to reinforce the goals and strategies outlined in the AICUZ report with the objective to minimize the potential cumulative effects of future development.

The Cities of Derby and Wichita and Sedgwick County, in cooperation with McConnell AFB, would also continue to pursue recommendations presented in the 2005 JLUS report. The JLUS identified several planning areas within which increased coordination and communication among stakeholders and increased levels of land use compatibility guidance were recommended. For example, the JLUS recommended managing growth in CZ and APZ areas through zoning requirements, instituting noise level reduction measures in local building codes, and acquiring land within APZ safety areas to minimize future land use conflicts (USAF 2012e).

#### *5.4.2.4 Infrastructure*

The FTU and MOB 1 scenarios would require additional facility C&D when considered in combination with the McConnell AFB IDP and the associated impacts identified in the IDEA. The FTU scenario would require the construction of new facilities, renovation/alteration/additions to existing facilities, and demolition of facilities (see Table 2-15). The MOB 1 scenario would require more construction activity (see Table 2-18) and therefore has a greater potential to contribute to cumulative effects.

The IDP includes projects for new construction, infrastructure improvements, natural infrastructure management, strategic sustainability performance (e.g., solar plant), and demolition of facilities (USAF 2012e). The potential for cumulative effects associated with conflicts between either of the KC-46A scenarios and the proposed IDP projects at McConnell AFB can be off-set by coordinating and including the KC-46A scenario in the USAF comprehensive planning process with AMC. Not all of the projects proposed in the IDP are approved or funded yet, and these projects would not be completed in the same timeframe as the projects identified for either of the KC-46A scenarios.

All C&D activities generally would be expected to result in short-term job creation and materials procurement. These types of short-term, construction-related benefits would occur regardless of project location and are not constraints to base development or contributions to significant cumulative effects. Sound engineering and management practices would minimize the potential for cumulative effects during and following construction. Additional impervious surface on the base from the proposed IDP projects would require installation of appropriate stormwater system improvements.

#### *5.4.2.5 Socioeconomics*

Any present or future actions that would involve an in- or out-migration of people to the area would create a cumulative impact on housing, economic activity (in the form of construction, employment, and earnings), educational facilities and staffing, and public and base services. Construction activities typically provide a beneficial economic impact on the area but are short-term for the duration of the project. However, many short-term projects occurring throughout the years provide a cumulative beneficial economic impact over the long-term.

In January 2012, Boeing announced that it will close its Wichita facilities by the end of 2013 (USAF 2012e). Boeing's expansive facilities abut McConnell AFB, and any future uses of those facilities are not known at this time.

Strategies to minimize cumulative effects to socioeconomics could include implementation of comprehensive plans, capital improvement plans, transportation plans, and other plans and coordination efforts that guide future development activities, including coordination with the base.

### **5.4.3 Irreversible and Irretrievable Commitment of Resources**

The irreversible environmental changes and irretrievable commitment of resources that would result from implementation of the KC-46A FTU or MOB 1 scenario at McConnell AFB would be similar in nature and have similar characteristics to those identified for Altus AFB in Section 5.1.3.

# CHAPTER 6

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## DRAFT EIS COMMENT SUMMARY





## 6.0 DRAFT EIS COMMENT SUMMARY

This chapter contains comments received from tribes; Federal, state, and local agencies; the public; and others during the public review period for the Draft Environmental Impact Statement (EIS). The 45-day Draft EIS public review process began on 25 October 2013 with the publication of the Notice of Availability (NOA) of the Draft EIS in the *Federal Register*. The public review period ended on 9 December 2013.

The U.S. Air Force (USAF) reviewed the comments and they were incorporated, as appropriate, into this Final EIS. The USAF encouraged public participation during the public hearings; through notifications via direct mailings, newspaper advertisements, and press releases; and via the project website.

### 6.1 COMMENT RECEIPT

All Draft EIS comments, including both written correspondence and oral testimony, were assigned unique comment numbers. These numbers were assigned by base and are listed in numerical order in Volume II, Appendix A, Section A.7.3. The comment numbers are organized using the alpha-numeric system shown in Table 6-1. A number was assigned to every comment received. The first character of the comment number is the first letter of the Air Force Base (AFB) applicable to the comment. If the comment applied to multiple bases, the comment was duplicated for each applicable base. The second set of characters in the numbering system is the running number of each comment. The third set of characters denotes that the comment applies to the Draft EIS, with the letter “W” used to denote comments submitted via the website. The last letter of the numbering system denotes if the commenter was an agency, organization, individual or tribe. All of the comments are included in Volume II, Appendix A, Section A.7.3 (on the CD-ROM attached to the back cover of this Final EIS).

**Table 6-1. Draft EIS Comment Numbering System Legend**

1. By Base		2. Comment Number	3. Version of EIS		4. Commenter <sup>a</sup>	
<b>A</b>	Altus	<b>001</b>	<b>D</b>	Draft EIS	<b>A</b>	Agency
<b>F</b>	Fairchild	<b>002</b>	<b>DW</b>	Draft EIS website comment	<b>O</b>	Organization
<b>G</b>	Grand Forks	<b>003...etc</b>			<b>I</b>	Individual
<b>M</b>	McConnell				<b>T</b>	Tribe

<sup>a</sup> Comments received from elected officials were recorded as Agency comments.

Two examples of how the comment numbers were assigned are shown below.

#### Examples:

F\_003\_D\_A = Fairchild AFB, comment #3, Draft EIS comment from an agency.

M\_027\_D\_I = McConnell AFB, comment #27, Draft EIS comment from an individual.

### 6.2 COMMENT REVIEW

In accordance with 40 *Code of Federal Regulations* (CFR) 1503.4, the USAF carefully considered all comments submitted. As discussed in Section 1.5.2, only substantive comments were responded to in the preparation of this Final EIS.

## **6.3 GOVERNMENT RESPONSES TO COMMENTS**

### **6.3.1 Locating Comments**

A directory of commenters (Table 6-2) begins on page 6-3. As noted on the public displays, sign-in sheets, and comment sheets at the public hearings, providing names during the public review process meant that each commenter understood that his/her name and comment would be made a part of the public record for this EIS. Table 6-2 provides an alphabetical listing of commenters organized first by the name of the organization (or “Private Citizen”), then by last name, followed by the unique number assigned to each comment submittal.

### **6.3.2 Locating Responses to Comments**

The USAF responses to substantive comments are contained in Table 6-3. Responses were assigned a unique response number based on the original comment number as described above. If, for example, your comment submittal was A\_001\_DW\_A, then the USAF response will be numbered A\_001\_DW\_A-R1. If the comment submittal covered more than one resource area, the comment and response specific to each resource area were separated in the table and the responses were assigned an additional number at the end (e.g., A\_001\_DW\_A-R2, A\_001\_DW\_A-R3, etc.).

Public and agency involvement is an important part of the NEPA process, and all comments are taken into consideration by the USAF during its decision-making process. Many of the comments express the views and opinions of the commenters. Such comments do not require a specific USAF response, but are included as part of the public input.

The USAF appreciates submission of all comments. The fact that a change in the proposed actions or the EIS analysis did not occur as a result of a comment does not reduce the value of the comment or an individual’s participation in the Environmental Impact Analysis Process (EIAP).

**Table 6-2. Directory of Commenters**

<b>Organization (Private Citizen, etc.)</b>	<b>Commenter Name</b>	<b>Comment Number</b>
3rd County Commission District in Sedgwick County	Peterjohn, Karl	M_047_D_A
Airway Heights Washington	Rushing, Pat	F_003_D_A
City of Derby	Sexton, Kathy	M_048_D_A
City of Valley Center	McNown, Michael	M_040_D_A
City of Wichita Airport Authority	White, Victor	M_057_D_A
District of Kansas Senate	Faust-Goudeau, Oletha	M_044_D_A
Div. of Environmental, Safety and Cultural Resource Management	Davis, Jeffrey	G_004_D_A
Environmental Resources and Household Hazardous Waste Facility	Erlenwein, Susan	M_052_D_O
Grand Forks American Legion Post #6	Greene, Robert E	G_002_D_O
Federal Aviation Administration	Roberts, Dennis E.	G_005_D_A
Federal Aviation Administration	Roberts, Dennis E.	M_070_D_A
Federal Aviation Administration	Roberts, Dennis E.	A_008_D_A
Federal Aviation Administration	Roberts, Dennis E.	F_017_D_A
Greater Spokane Incorporated (GSI)	Jarrard, Sandra	F_008_D_O
Kansas Council on Economic Education	Graham, Jim	M_001_DW_O
Kansas House of Representatives	Bridges, Carolyn L	M_013_D_A
Kansas House of Representatives	Flickner, Ryan	M_041_D_A
Kansas House of Representatives	Howell, Jim	M_045_D_A
Kansas House of Representatives	Porter, Toni	M_043_D_A
North Dakota State Water Commission	Weispfenning, Linda	G_006_D_A
North Dakota Dept. of Health	Glatt, L. David	G_003_D_A
Office of Federal Activities	Bromm, Susan	A_009_D_A
Oklahoma State Senate	Schulz, Mike	A_005_D_A
Private Citizen	Alexander, Diana	M_027_D_I
Private Citizen	Alexander, Diana	M_058_D_I
Private Citizen	Blumkin, David	G_001_D_I
Private Citizen	Collingwood, K. Renee	A_001_D_I
Private Citizen	Darnell, Mitch	A_002_D_I
Private Citizen	Duhnke, Todd	M_036_D_I
Private Citizen	Duncan, Jimmye	M_063_D_I
Private Citizen	Dye, Dennis	M_001_D_I
Private Citizen	Eckles, Jim and Margie	M_066_D_I
Private Citizen	Ferraro, Claudio	M_026_D_I
Private Citizen	Gunther, Maurice Clark	M_032_D_I
Private Citizen	Hadley, Rich	F_011_D_I
Private Citizen	Hall, Connie	A_003_D_I
Private Citizen	Hitchcock, David	M_060_D_I
Private Citizen	Howell, Jim	M_020_D_A
Private Citizen	Jones, Dave	F_007_D_I
Private Citizen	Jones, Margaret	F_006_D_I
Private Citizen	Leshner, Keith	M_007_D_I
Private Citizen	Leverett, Joe	A_004_D_O
Private Citizen	Lyon, Vaughn	M_039_D_I
Private Citizen	Lyon, Vaughn	M_035_DW_I
Private Citizen	McClain, Cathy	M_050_D_I

**Table 6-2. Directory of Commenters (Continued)**

<b>Organization (Private Citizen, etc.)</b>	<b>Commenter Name</b>	<b>Comment Number</b>
Private Citizen	McCue, Ellen L	M_006_D_I
Private Citizen	McCune, John	M_028_D_I
Private Citizen	McDaniel, Brian	M_062_D_I
Private Citizen	McDaniel, Brian M	M_033_D_I
Private Citizen	McDevitt, Jim	F_010_D_I
Private Citizen	Nestelroad, Bill	M_008_D_I
Private Citizen	Nestelroad, William	M_005_D_I
Private Citizen	Neunherz, Andrew	F_012_D_I
Private Citizen	None provided	M_017_D_I
Private Citizen	Pachankis, Johanne	M_004_D_I
Private Citizen	Pawleski, Charles E.	M_030_D_I
Private Citizen	Peterson, James	M_038_D_I
Private Citizen	Pulley, Jack	M_025_D_I
Private Citizen	Pulley, Jack	M_055_D_O
Private Citizen	Roberts, John	M_002_D_I
Private Citizen	Roberts, John	M_021_D_I
Private Citizen	Roberts, John & Audrey	M_022_D_I
Private Citizen	Rupp, Teresa	M_003_D_I
Private Citizen	Russell, L.	M_064_D_I
Private Citizen	Sargent, Bruce	M_034_D_I
Private Citizen	Sargent, Charlotte	M_031_D_I
Private Citizen	Sawdy, Richard F.	F_002_D_I
Private Citizen	Scruggs, Bonnie	M_018_D_I
Private Citizen	Shifflett, Dana	M_009_D_I
Private Citizen	Skeleton, Leon	M_059_D_I
Private Citizen	Spino, Pat	F_009_D_I
Private Citizen	Stephen, Ron	M_029_D_I
Private Citizen	Thompson, Willard	M_071_D_I
Private Citizen	Thwong, Kevin	F_013_D_I
Private Citizen	Wolf, Ronald L.	M_023_D_I
Private Citizen	Wynne, William	M_010_D_I
Sedgwick County	Schlegel, John	M_053_D_A
Sedgwick County Commissioners	Skelton, Jim	M_012_D_A
Sedgwick County Government	Skelton, Jim	M_046_D_A
Spokane City Council	McDaniel, Adam	F_004_D_A
Spokane City Council	Stuckart, Ben	F_001_D_A
Spokane Tribe	Peone, Rudy	F_015_D_T
Spokane Tribe	Wheat, Scott	F_005_D_T
State of Kansas	Brownback, Sam	M_073_D_A
Tanker Force and the Joint Military Committee	Roberts, Wayne	M_056_D_O
U.S. Department of the Interior	Maytubby, Bruce	A_006_D_A
U.S. Department of the Interior	Maytubby, Bruce	M_065_D_A
U.S. Department of the Interior	Spencer, Stephen	A_007_D_A
U.S. Environmental Protection Agency	Bromm, Susan	F_018_D_A
U.S. Environmental Protection Agency	Bromm, Susan	G_007_D_A
U.S. Environmental Protection Agency	Bromm, Susan	M_072_D_A

**Table 6-2. Directory of Commenters (Continued)**

<b>Organization (Private Citizen, etc.)</b>	<b>Commenter Name</b>	<b>Comment Number</b>
U.S. House of Representatives	Huelskamp, Tim	M_016_D_A
U.S. House of Representatives	Huelskamp, Tim	M_069_D_A
U.S. House of Representatives	Jenkins, Lynn	M_015_D_A
U.S. House of Representatives	Jenkins, Lynn	M_068_D_A
U.S. House of Representatives	McMorris Rodgers, Cathy	F_016_D_A
U.S. House of Representatives	Yoder, Kevin	M_014_D_A
U.S. House of Representatives	Yoder, Kevin	M_037_D_A
U.S. Senate	Roberts, Pat	M_067_D_A
U.S. Senator Jerry Moran	Zamrsla, Mike	M_042_D_A
Via Christi St. Joseph Hospital	Ferraro, Claudio	M_054_D_O
Washington State Dept. of Archaeology and Historic Preservation	Holter, Russell	F_014_D_A
Wichita Air Traffic Control Tower	Carpenter, Kurt	M_051_D_A
Wichita Airport Authority	White, Victor	M_019_D_A
Wichita Independent Business Association	Witsman, Tim	M_061_D_O
Wichita Independent Business Association	Witsman, Tim	M_024_D_O
Wichita Metro Chamber of Commerce	Gann, Debbie	M_049_D_O
Wichita Metro Chamber of Commerce	Plummer, Gary	M_011_D_O

**Table 6-3. USAF Responses to Substantive Comments**

<b>Comment No.</b>	<b>Comment</b>	<b>Comment Response</b>
A_002_D_I-R3	I also think the time and cost of these studies are a waste of American tax dollars. When a new modern aircraft is introduced and it has less impact of the previous aircrafts which has already had an EIS, it's not necessary for another study. Number one if one makes the DOD mad, Altus could lose the Air Force Base.	Thank you for your comment. As outlined in the Draft EIS, the KC-46A does have different environmental impacts than aircraft previously studied and the areas around the bases proposed for the beddowns have changed, thus altering impacts. The USAF closely scrutinizes proposals to ensure that it conducts only the environmental studies required under the National Environmental Policy Act. Given the potential for significant socioeconomic impacts, the Air Force conducted the EIS for this proposal.
F_003_D_A-R2	The other thing I would like to say is that there are tornadoes in Wichita, Kansas, and in Oklahoma, and we don't have that here. We have pretty nice weather. So you might build some nice buildings down there and save a lot of money, but if you come to Spokane, you will actually save a lot of that money. We have buildings that are just now falling apart that were built back during World War II.	As a part of the Strategic Basing Process the Secretary of the Air Force considered both the quantifiable data included in the basing criteria (See Section 2.2.1 of the Draft EIS) as well as intangible factors, including weather impacts, in the application of military judgment. Thank you for your comment and participation in the environmental impact analysis process.
F_005_D_T-R2	We, too, participated in the development of the JLUS policies, and as with other local jurisdictions, the tribe has adopted and implemented the JLUS that will apply to all development within that 145 acre piece. That is one of the things that we noted in our review of the EIS that we certainly wanted to include, and we will supplement or include in our written testimony, which we will submit by the deadline, the tribe's copy of its JLUS ordinance. And we would appreciate if the EIS could be supplemented to reflect the tribe, as a local government, has also enacted land use regulations consistent with JLUS policies and recommendations.	The USAF recognizes the tribe as a sovereign government with land use regulation consistent with the JLUS. Section 3.2.7 and Table 5-3 of the EIS have been supplemented to reflect these land use regulations.
F_005_D_T-R3	Finally, I'm sure my three minutes is coming up quick, also in our review of the EIS, and we wanted to comment tonight, it's very appropriate that, as I identified the tribe as the resident tribe to be contacted to ensure that any cultural resources are appropriately cataloged and protected pursuant to relevant federal law, NEPA, etc.	Thank you for your comment. The USAF and Fairchild AFB will continue to coordinate with the Spokane Tribe and other affiliated tribes throughout the EIS process for this project and in other projects to ensure the protection of cultural resources.
F_007_D_I-R1	Dave Jones, J-o-n-e-s. I am a retired colonel base commander at Fairchild. I would like to mention just a couple of quick things. I won't take long. One, and which was not discussed here, there's no runway requirements. We have a brand new runway. We have excellent taxiways. They've been fixed, too. All of which were not so good 40 years ago, but they're all very good now. Yes, we have an old hangar. It was built way back when this was the primary experimental base for SAC when they conducted their annual bomb comp, and constantly, we had to refuel up to 100 aircraft simultaneously. As a result, we have the largest gasoline supply system in the Air Force here at Fairchild. So I think a lot of things weren't considered. The other thing is I know all the other bases. And the Tornado Alley has hit Altus and it's McConnell in the past. It just hit Illinois, which it almost never hits. The thing is, and at one time when I was around, it hit Sheppard, which they said, Oh, it will never hit Sheppard. We didn't even have an alarm for it, and it came through and cleaned out the whole warehouse. The thing is, tornadoes are disastrous to aircraft as we've seen just recently. I think that alone makes it questionable, that decision. The one up north is not a very good place to put this kind of business. I can understand why they chose McConnell to a certain extent because it's in the center of the country, but our primary mission today, right this moment, in the long range is going to be in the Pacific. That's why its base was here, was to supply the Pacific. We have traffic continuous out of here. However, with the tanker today, you can go all around the world, so you can put the tanker anywhere. You can put it in New York City if you wanted to, but I don't advise it. Thank you	Thank you for your comment. As described in Section 2.2.1 of the Draft EIS, the USAF strategic basing process used several operational and other criteria to identify candidate and alternative bases for the MOB 1 and FTU missions. These basing criteria included runway length and runway bearing capacity among other criteria. Fairchild AFB met the criteria and for the purposes of the EIS was selected as an alternative base for the MOB 1 mission. The EIS process is focused on evaluating each alternative to inform the Secretary of the Air Force on potential environmental impacts associated with each base. The USAF considers public comments in making decisions. We appreciate your participation in the environmental impact analysis process.

**Table 6-3. USAF Responses to Substantive Comments (Continued)**

Comment No.	Comment	Comment Response
F_015_D_T-R3	<p>FAFB: Land Use Compatibility: The Tribe also enjoys modern connections to the vicinity of FAFB. In 2001, the United States took legal ownership of the "West Plains Property" in trust for the Tribe. The West Plains Property is located approximately two miles from FAFB, northwest of the intersection of Craig Road and U.S. Highway 2. The Tribe exercises governmental jurisdiction over this 145-acre "trust" parcel consistent with federal law. Since 2007, the Tribe has operated its "SPOKO" retail fuel and convenience store on this 145-acre parcel. To further its goal of achieving self-sufficiency, the Tribe is planning a mixed-use development (referred to herein as the "Project" or the "Spokane Tribe Economic Project" or "STEP") on the West Plains Property. On February 24, 2006 the Tribe submitted a request to the BIA Northwest Regional Office requesting the Secretary to engage in a Two-Part Determination pursuant to Section 20 of the Indian Gaming Regulatory Act ("IGRA") (25 U.S.C. 2719) that would allow the Tribe to conduct Class II and Class III Gaming on the Project Site. See STOI Resolution No. 2006-171 dated February 2, 2006. Because the project site is near FAFB, the Tribe reached out early to Base Command to ensure that STEP will not adversely affect FAFB Operations. Those efforts included the Tribe's participation in a Joint Land Use Study ("JLUS") commissioned by the Spokane County Board of County commissioners and funded by the Department of Defense. The Department of Defense defines a JLUS as an "Analytical planning study of civilian development patterns and land use activities in the vicinity of a military installation that result in recommendations for instituting compatible civilian land use activities and development patterns that protect and preserve the utility and the operational effectiveness of military installations." Spokane County prepared the JLUS in collaborating with FAFB, Spokane International Airport, local jurisdictions, and representatives from the Spokane Tribe and Kalispell Tribe. The Tribe enacted the West Plains Development Code (attached), in order to implement JLUS recommendations on the West Plains Property. Consistent with the JLUS recommendations, the West Plains Development code imposes restrictions and requirements for STEP, including building heights, density, sound attenuation, wildlife attractants, light and glare. The West Plains Development Code also incorporates mitigation requirements set forth in the Environmental Impact Statement prepared for STEP by the Bureau of Indian Affairs pursuant to Department of Interior regulations set forth at 25 CFR Part 292 ("STEP EIS"). As stated in the Final STEP EIS, at the invitation of the Bureau of Indian Affairs ("BIA"), the USAF participated in the NEPA process as a cooperating agency. The BIA thoroughly considered USAF official comments, provided on the Draft STEP EIS and the Preliminary Final STEP EIS, and in many instances changes were made to the Final STEP EIS as a result of USAF comments. BIA representatives coordinated directly with USAF representatives to ensure that any concerns raised in the comments were satisfactorily addressed. Importantly, the Tribe's West Plains Development code also incorporates mitigation measures recommended within the Final STEP EIS to ensure that the construction and operation of STEP is consistent with FAFB operations. The DEIS mentions that the City of Airway Heights, the City of Spokane, the City of Medical Lake, and Spokane have implemented JLUS recommendations through the enactment of land use regulations. The Tribe respectfully requests that the Final EIS for KC-46A Formal Training Unit and First Main Operating Base Beddown similarly mention the Tribe's implementation of JLUS recommendations through the enactment of the Tribe West Plains Development Code.</p>	<p>The USAF appreciates the current and past coordination efforts with the Spokane Tribe and the involvement of the Spokane Tribe in the environmental impact analysis process for this project. The USAF recognizes the Tribes participation in the JLUS process and Section 3.2.7 and Table 5-3 of the EIS have been updated to reflect the Spokane Tribes implementation of the JLUS regulations.</p>
G_002_D_O-R2	<p>Please note the noise contour you are using for Grand Forks AFB, ND is out of date since the Alert Aircraft Parking Area (AAPA) is no longer attached to the runway. In addition, this area is scheduled to be converted into an industrial park to support the Remotely Piloted Aircraft (RPA) mission.</p>	<p>Thank you for your comment. The noise contours and other noise results for Grand Forks AFB have been updated and are included in the Grand Forks AFB Noise sections of Chapters 3 and 4 of the Final EIS.</p>

**Table 6-3. USAF Responses to Substantive Comments (Continued)**

Comment No.	Comment	Comment Response
G_003_D_A-R1	This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods.	Thank you for your comment. The USAF appreciates your input into the environmental impact analysis process. The conclusions of the EIS are consistent with this comment.
G_003_D_A-R2	All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner. We believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.	Thank you for your comment. Fugitive dust emissions are addressed in the air quality section for each base in Chapter 4 of the Draft EIS.
G_003_D_A-R3	Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached. 3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210). The facility is currently covered by the NDPDES industrial storm water permit. The department recommends reviewing whether storm water quality improvements can be incorporated as part of any development or redevelopment project. Check with local officials to be sure any local storm water management considerations are addressed. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification. If you have any questions regarding our comments please feel free to contact this office. Construction and Environmental Disturbance Requirements: These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site. Soils Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage. Surface Waters All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department. Fill Material Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.	Thank you for your comment. The USAF is committed to compliance with permits, stormwater requirements and certifications. Should Grand Forks AFB be selected to host the KC-46A MOB 1, the USAF will comply with relevant state and Federal stormwater regulations prior to development.

**Table 6-3. USAF Responses to Substantive Comments (Continued)**

<b>Comment No.</b>	<b>Comment</b>	<b>Comment Response</b>
G_003_D_A-R4	All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the Department's Division of Air Quality (701-328-5188) is required before any demolition. Removal of any friable asbestos containing material must be accomplished in accordance with section 33-15-13-02 of the North Dakota air pollution control rules. Many buildings constructed prior to 1978 have interior and exterior surfaces coated with lead-based paint. The Office of Housing and Urban Development (HUD), as well as other Federal Housing Authorities, have implemented requirements for reducing exposure to lead from lead-based paint. If the building receives Federal funding, these materials must be handled according to their requirements which may include the use of properly trained individuals for removal and disposal. If the building does not receive Federal funding, the lead-based paint should be properly handled to reduce to prevent exposing workers and building occupants to lead. The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area.	Thank you for your comment. Asbestos, lead-based paint and other toxic substances associated with building demolition are described in the hazardous materials and waste sections for each base in Chapter 4 of the Draft EIS. The USAF is committed to the safe renovation and demolition of facilities. Demolitions and renovations will be conducted in compliance with all relevant state and Federal regulations.
G_003_D_A-R5	Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.	The noise sections for each base in Chapter 4 of the Final EIS will be modified to discuss the potential adverse impacts of construction noise.
G_006_D_A-R1	The following comments are submitted regarding the Draft Environmental Impact Statement involving the KC-46 Formal Training Unit (FTU) and First Main Operating Base (MOB 1 Beddown: Page 2-61, Paragraph 5, Line 3: The North Dakota state agency responsible for certification of Section 401 of the Clean Water Act is the North Dakota Department of Health and NOT the North Dakota State Water Commission as stated. If wetlands with a watershed great than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer. Page 4-75, Paragraph 1, Line 5: The North Dakota state agency responsible for certification of Section 401 of the Clean Water Act is the North Dakota Department of Health and NOT the North Dakota State Water Commission as stated. If wetlands with a watershed greater than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer.	Text in Sections 2.8 and 4.3.5.4 of the Final EIS was revised to indicate that the North Dakota Department of Health is responsible for Section 401 certification. Text was also revised to indicate wetland impacts with a watershed greater than 80 acres require a permit from the North Dakota State Engineer.
M_027_D_I-R1	My concerns are based on the crash of a KC-135 tanker crash that released 30,000 gallons of jet fuel. Flight plan concerns me because the crash occurred at 21st and Platt. Maintenance logs indicated problems with autopilot. They also indicated that the landing gear was installed backwards. This information was in Mayday in Wichita by DW Carter. I want to say that McConnell had kept high standards in maintenance. I hope Boeing will cooperate with fix any defects in the tankers. I hope that there is an emergency plan in place if a tragedy such as the one in 1965 again occurs.	Thank you for your comment. Flight safety and mishap prevention are of utmost importance to the USAF in all flight planning and operations. The USAF goes to the greatest lengths possible to minimize the risk to the public, USAF personnel, and operations. The USAF implements stringent flight safety procedures and practices to protect all concerned during flight operations. Flight and ground safety are addressed in the Draft EIS Safety sections. Section 4.4.3 of the Draft EIS indicates that emergency response plans currently in place for the KC-135 aircraft would be updated to include procedures and response actions specific to the new KC-46A aircraft.

**Table 6-3. USAF Responses to Substantive Comments (Continued)**

Comment No.	Comment	Comment Response
M_027_D_I-R2	My concerns are based on the crash of a KC-135 tanker crash that released 30,000 gallons of jet fuel. I hope that there is an emergency plan in place if a tragedy such as the one in 1965 again occurs.	As described in Section 4.4.3 of the Draft EIS, the USAF maintains emergency response plans for aircraft mishaps. This includes mishaps that could result in fuel spills. As part of the aircraft transition, the USAF will update base emergency response plans to include the KC-46A aircraft.
M_038_D_I-R1	A few weeks ago it was published that all of the Boeing Property next to McConnell is for sale. Why wouldn't it make sense for the government A/F to purchase or lease all of the real-estate, B-52 hanger, B-47 hanger, re-process building, electronics building and A.F. one hanger plus much more and cut down one building all new hangers for the C-46A Tankers. Those hangers will hold several tankers each, I know, I seen it and spoke to a gentleman by phone yesterday at McConnell. Thousands of large air planes have taxied from the Boeing flight line, where there are, blast fences, to McConnell for take-off and landings and taxi back. I hate to see any of our military cut back but perhaps what I've suggested could save some money and be an asset to the A/F.	Thank you for your suggestions. The Boeing property was not evaluated as a potential location for the KC-46A beddown. The Strategic Basing Process as described in Section 2.2.1 of the Draft EIS looked at existing Air Force bases that could support the mission. The acquisition of additional property was not considered a viable option due to the time and expense required to purchase or lease new lands.
M_058_D_I-R2	Also part of the reason why I am here is because of the tragedy that happened in 1965 on 21st and Piatt. My parents lived at 21st and Grove and in listening to the other speakers and watching their presentation, I do think that McConnell would be the best place for it because they seem to be -- their safety record is quite good with the KC-135s. There hasn't been a repeat of what happened that day. And also I was looking at the specs on the KC-46 and if it can survive a nuclear attack, I'm thinking that it's probably a bit more at the very least crashworthy than the KC-135. And I also feel that another thing that should be considered is the -- I would hope that even though Boeing has left our fair city that the close relationship between McConnell and Boeing will continue and that they will be able to put in input on the KC-46A. And in closing, another thing that I am concerned about is if there's any emergency plans that might be put into place or any sort of disaster training scenarios that could be put into place to avoid -- if a tragedy like that would happen again, God forbid, we don't want that and I'm thinking -- and, like I said, I was looking at the specs of the KC-46 and I don't think that's likely, but we do need to make preparations for and plans for disasters whether they occur or not.	Thank you for your comment. Flight safety and mishap prevention are of utmost importance to the USAF in all flight planning and operations. The USAF goes to the greatest lengths possible to minimize the risk to the public, USAF personnel, and operations. The USAF implements stringent flight safety procedures and practices to minimize such incidents. Flight and ground safety are addressed in the Draft EIS Safety sections. Section 4.4.3 of the Draft EIS indicates that the existing emergency response plans currently in place for the KC-135 aircraft would be updated to include procedures and response actions specific to the new KC-46A aircraft.

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AFI 32-7061 – Environmental Impact Analysis Program

AFI 32-7064 – Integrated Natural Resources Management

AFI 32-7086 – Hazardous Material Management

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AFI 32-1021 – Planning and Programming Military Construction (MILCON) Projects

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32 CFR 989.22(d) – Department of the Air Force, Mitigation Plan

36 CFR 800.6(c) – Resolution of Adverse Effects

40 CFR 112 – Oil Pollution Prevention

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40 CFR 1508.7 – Terminology and Index, Cumulative Impact

40 CFR 1508.20 – Environmental Impact Statements, NEPA Mitigation

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EO 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

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UFC 3-101-01, Architecture

UFC 3-230-03, Water Treatment

## **United States Code**

42 U.S.C. 7401 et seq., Clean Air Act of 1970.

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# LIST OF REPOSITORIES—





## **LIST OF REPOSITORIES**

### **ALTUS AIR FORCE BASE (AFB) REPOSITORIES**

- Altus AFB Base Library, 109 E Avenue, Bldg. 65, Altus AFB, OK 73523
- Altus Public Library, 421 N. Hudson Street, Altus, OK 73521
- Lawton Public Library, 110 SW 4th Street, Lawton, OK 73501

### **ALTUS AFB AUXILIARY AIRFIELD REPOSITORIES**

#### **Rick Husband Amarillo International Airport (AMA)**

- Amarillo Public Library, 413 Southeast 4th Avenue, Amarillo, TX 79101

#### **Clinton Sherman Industrial Airpark (CSM)**

- Western Plains Library System, 501 S. 28th Street, Clinton, OK 73601

#### **Lubbock Preston Smith International Airport (LBB)**

- Mahon Public Library, 1306 9th Street, Lubbock, TX 79401

#### **Fort Worth Alliance Airport (AFW)**

- Summerglenn Library, 4205 Basswood Boulevard, Fort Worth, TX 76137

### **FAIRCHILD AFB REPOSITORIES**

- Fairchild AFB Library, 2 W. Castle Street, Fairchild AFB, WA 99011
- Spokane Public Library, 906 West Main Avenue, Spokane, WA 99201

### **GRAND FORKS AFB REPOSITORIES**

- Grand Forks AFB Library, 511 Holzapple Street, Grand Forks AFB, ND 58205
- Grand Forks Public Library, 2110 Library Circle, Grand Forks, ND 58201

### **McCONNELL AFB REPOSITORIES**

- McConnell AFB Library, 53476 Wichita Street, Bldg. 412, McConnell AFB, KS 67221
- Central Library, 223 S. Main, Wichita, KS 67202

### **McCONNELL AFB AUXILIARY AIRFIELD REPOSITORIES**

#### **Clinton Sherman Industrial Airpark (CSM)**

- Western Plains Library System, 501 S. 28th Street, Clinton, OK 73601

#### **Forbes Field (FOE)**

- Topeka & Shawnee County Public Library, 1515 Southwest 10th Avenue, Topeka, KS 66605

#### **Wichita Mid-Continent Airport (ICT)**

- Central Library, 223 S. Main, Wichita, KS 67202

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# NEPA DISCLOSURE STATEMENT

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**NEPA DISCLOSURE STATEMENT FOR THE  
KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE  
(MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT (EIS)**

The Council on Environmental Quality (CEQ) Regulations at Title 40 of the Code of Federal Regulations (CFR) Section 1506.5(c), which have been adopted by the U.S. Air Force (32 CFR 989), require contractors and subcontractors who will prepare an environmental impact statement to execute a disclosure specifying that they have no financial or other interest in the outcome of the project.

"Financial or other interest in the outcome of the project" is defined as any direct financial benefit such as a promise of future construction or design work in the project, as well as indirect financial benefits the contractor is aware of.

In accordance with these requirements, the offeror and any proposed subcontractors hereby certify as follows, to the best of their actual knowledge as of the date set forth below:

- (a)   X   Offeror and any proposed subcontractors have no financial or other interest in the outcome of the project.
- (b)        Offeror and any proposed subcontractor have the following financial or other interest in the outcome of the project and hereby agree to divest themselves of such interest prior to award of this contract, or agree to the attached plan to mitigate, neutralize or avoid any such conflict of interest.

Financial or Other Interests:

None – to the best of our knowledge and belief

Certified by:

*Patricia Garcia*

Signature

PATRICIA L. GARCLA

Name

SR. CONTRACTS REPRESENTATIVE

Title

Leidos, Inc.

Company

February 13, 2014

Date

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# GLOSSARY

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## GLOSSARY

***Above Ground Level (AGL):*** Altitude expressed in feet measured above the ground surface.

***Accident Potential Zone (APZ):*** An area near a runway that is based on historical military accident and operations data and the application of a margin of a safety that represents those areas where an accident is most likely to occur. APZs are normally 3,000 feet wide and extend up to 15,000 feet from the end of the runway.

***Asbestos-containing Material (ACM):*** any material containing more than 1 percent asbestos.

***Air Force Instruction (AFI):*** Instructions implementing U.S. laws and regulations, and providing policy for USAF personnel and activities.

***Air Combat Command (ACC):*** The U.S. Air Force Command that operates combat aircraft assigned to bases within the contiguous 48 states, except those assigned to Air National Guard and the Air Force Reserve Command.

***Air Installation Compatible Use Zone (AICUZ):*** A land-use-planning program, used by the military, to protect the health, safety, and welfare of those living near military airfields while preserving the defense flying mission. AICUZ presents noise zones and accident potential zones for military airfields and recommendations for compatible land use.

***Air Mobility Command (AMC):*** AMC, a major command with headquarters at Scott Air Force Base, Illinois. AMC provides America's Global Reach. This rapid, flexible, and responsive air mobility promotes stability by keeping America's capability and character highly visible.

***Air Quality:*** The degree to which the ambient air is pollution-free, assessed by measuring a number of indicators of pollution.

***Beddown:*** The provision of facilities and other necessary infrastructure to support a new mission or weapon system.

***Bird/Wildlife-Aircraft Strike Hazard (BASH):*** A U.S. Air Force program to reduce the possibilities of bird or wildlife collisions with aircraft.

***Clean Air Act (CAA):*** This Act empowered the U.S. Environmental Protection Agency to establish standards for common pollutants that represent the maximum levels of background pollution that are considered safe, with an adequate margin of safety to protect public health and safety.

***Clean Water Act (CWA):*** The primary federal law in the United States governing water pollution. The CWA established the goals of eliminating releases of high amounts of toxic substances into water, eliminating additional water pollution, and ensuring that surface waters would meet standards necessary for human sports and recreation.

***Clear Zone (CZ):*** An accident potential zone constituting the innermost portions of the runway approach.

***Council on Environmental Quality (CEQ):*** The Council is within the Executive Office of the President and is composed of three members appointed by the President, subject to approval by the Senate. Members are to be conscious of and responsive to the scientific, economic, social, esthetic, and cultural needs of the nation; and to formulate and recommend national policies to promote the improvement of environmental quality.

***Day-Night Average Sound Level (DNL):*** DNL is a noise metric combining the levels and durations of noise events and the number of events over an extended time period. It is a

cumulative average computed over a 24-hour period to represent total noise exposure. DNL also accounts for more intrusive nighttime noise, adding a 10 dB penalty for sounds after 10:00 P.M. and before 7:00 A.M. DNL is the Federal Aviation Administration's (FAA) primary noise metric. FAA Order 1050.1E defines DNL as the yearly day/night average sound level.

**Decibel (dB):** A sound measurement unit.

**De Minimis Threshold:** The minimum threshold for which a conformity determination must be performed for various criteria pollutants in various areas.

**Endangered Species:** The Endangered Species Act of 1973 defined the term "endangered species" to mean any species (including any subspecies of fish or wildlife or plants, and any distinct population segment of any species or vertebrate fish or wildlife which interbreeds when mature) that is in danger of extinction throughout all or a significant portion of its range.

**Environmental Justice:** Pursuant to Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority and Low-Income Populations*, review must be made as to whether a federal program, policy, or action presents a disproportionately high and adverse human health or environmental effect on minority and/or low-income populations.

**Environmental Night:** The period between 10 P.M. and 7 A.M. when 10 decibels is added to aircraft noise levels due to increased sensitivity to noise at night.

**Fiscal Year:** U.S. Government accounting year beginning 1 October through 30 September.

**Groundwater:** Water held underground in the soil or in pores and crevices in rock.

**Floodplain:** An area of low-lying ground adjacent to a river, formed mainly of river sediments and subject to flooding.

**Formal Training Unit (FTU):** A military schoolhouse where U.S. Air Force pilots receive initial aircrew training on a particular aircraft.

**Hazardous Material:** Solids, liquids, or gases that can harm people, other living organisms, property, or the environment.

**Hazardous Waste:** Waste that poses substantial or potential threats to public health or the environment. In the United States, the treatment, storage and disposal of hazardous waste is regulated under the Resource Conservation and Recovery Act.

**Integrated Noise Model (INM):** The INM is the preferred model typically used for Federal Aviation Regulations Part 150 noise compatibility planning and for Federal Aviation Administration Order 1050 environmental assessments and environmental impact statements. INM is a computer model that evaluates aircraft noise impacts in the vicinity of airports. It is developed based on the algorithm and framework from SAE AIR 1845 standard, which used Noise-Power-Distance data to estimate noise accounting for specific operation mode, thrust setting, and source-receiver geometry, acoustic directivity and other environmental factors. The INM can output noise contours for an area or noise level at pre-selected locations. The noise output can be exposure-based, maximum-level-based, or time-based.

**Interagency/Intergovernmental Coordination for Environmental Planning (IICEP):** A federally mandated process for informing and coordinating with other governmental agencies regarding proposed actions.

**Joint Land Use Study (JLUS):** A JLUS is a cooperative land use planning effort between military installations and surrounding communities that examines the positive and negative impacts that military installations have on surrounding communities, and vice versa.

**Main Operating Base (MOB):** A permanently manned, well-protected base with robust infrastructure. MOBs are characterized by command and control structures, enduring family support facilities, and strengthened force protection measures.

**Maximum Sound Level ( $L_{max}$ ):**  $L_{max}$  is the highest sound level that occurs during a single aircraft overflight. For an observer, the noise level starts at the ambient noise level, rises up to the maximum level as the aircraft flies closest to the observer, and returns to the ambient level as the aircraft recedes into the distance. Federal Aviation Administration Order 1050.1E defines  $L_{max}$  as a single event metric that is the highest A-weighted sound level measured during an event.

**Mean Sea Level (MSL):** Altitude expressed in feet measured above average sea level.

**Military Operations Area (MOA):** Airspace below 18,000 feet above mean sea level established to separate military activities from Instrument Flight Rule traffic and to identify where these activities are conducted for the benefit of pilots using Visual Flight Rule.

**Mobile Sources:** Includes cars and light trucks, heavy trucks and buses, nonroad engines, equipment, and vehicles.

**National Ambient Air Quality Standards (NAAQS):** NAAQS are established by the U.S. Environmental Protection Agency for criteria pollutants that represent the maximum levels of background pollution considered safe, with an adequate margin of safety, to protect public health and safety.

**National Environmental Policy Act (NEPA):** The National Environmental Policy Act of 1969 directs federal agencies to take environmental factors into consideration in their decisions.

**National Historic Preservation Act (NHPA):** The National Historic Preservation Act of 1966, as amended, established a program for the preservation of historic properties throughout the United States.

**National Register of Historic Places (NRHP):** The NRHP is the Federal government's official list of districts, sites, buildings, structures, and objects deemed worthy of preservation.

**NOISEMAP:** NOISEMAP is a group of computer programs developed over a number of years by the U.S. Air Force for prediction of noise exposures in the vicinity of a military installation. NOISEMAP is the primary computer model used by the U.S. Department of Defense for evaluating military fixed-wing aircraft noise. It contains a suite of computer programs for prediction of noise exposure from aircraft flight, maintenance, and ground runup operations. NOISEMAP output includes noise contours, noise levels at preselected locations, and other supplemental metrics to assist users in analyzing impacts resulting from aircraft noise in the airfield environment.

**Onset Rate-Adjusted Monthly Day-Night Average Sound Level ( $DNL_{mr}$ ):** Onset Rate-Adjusted Monthly Day-Night Average Sound Level is the measure used for subsonic aircraft noise in military airspace (Military Operations Areas or Warning Areas). This metric accounts for the fact that when military aircraft fly low and fast, the sound can rise from ambient to its maximum very quickly. Known as an onset-rate, this effect can make noise seem louder due to the added “surprise” effect. Penalties of up to 11 dB are added to account for this onset-rate. Noise levels are interpreted the same way for  $L_{dnmr}$  as they are for DNL. (See DNL above).

**Operation:** An operation consists of a single activity such as a landing or a takeoff by one aircraft. Each time a single aircraft flies into a different airspace unit, one operation is counted. During a single sortie, an aircraft could fly in several airspace units and conduct a number of operations; therefore, the number of operations exceeds the number of sorties.

**Power Setting:** The power or thrust output of an engine in terms of kilonewtons thrust for turbojet and turbofan engines or shaft power in terms of kilowatts for turboprop engines.

**Primary Aerospace Vehicles Authorized (PAA):** PAA consists of the aircraft authorized and assigned to perform a U.S. Air Force wing's mission.

**Prime Farmland:** Prime farmlands are designations assigned by the U.S. Department of Agriculture. Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. The land is also used as cropland, pastureland, rangeland, forest land, or other land, but cannot be used as urban built-up land or water.

**Region of Influence (ROI):** The geographic scope of potential consequences in an area.

**Scoping:** A National Environmental Policy Act process of identifying the main issues of concern at an early stage in planning in order to discover any alternatives and aid in site selection.

**Sortie:** A sortie consists of a single military aircraft flight from the initial takeoff through the final landing and includes all activities that occur during that mission. For this EIS, the term sortie is used when referring to the quantity of aircraft operations from the airfield. A sortie can include more than one operation.

**Sound Exposure Level (SEL):** Sound Exposure Level (SEL) accounts for both the maximum sound level and the length of time a sound lasts. It provides a measure of the total sound exposure for an entire event. Federal Aviation Administration Order 1050.1E defines SEL as a single event metric that takes into account both the noise level and duration of the event and references to a standard duration of one second.

**State Historic Preservation Office (SHPO):** State department responsible for assigning protected status for cultural and historic resources.

**Threatened Species:** A species likely to become endangered within the foreseeable future throughout all, or a significant portion, of its range.

**Traditional/Cultural Resource:** Traditional and cultural resources are any prehistoric or historic district, site or building, structure, or object considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes.

**Wetland, Jurisdictional:** A jurisdictional wetland is a wetland that meets all three U.S. Army Corps of Engineers' criterion for jurisdictional status: appropriate hydrologic regime, hydric soils, and facultative to obligate wetland plant communities under normal growing conditions.

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Formal Training Unit (FTU) &  
First Main Operating Base (MOB 1)

# KC-46A Beddown



FINAL

## KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN EIS



VOLUME II

Prepared for:  
Air Force Civil Engineer Center  
Air Mobility Command  
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## ACRONYMS AND ABBREVIATIONS

°F	degrees Fahrenheit
µg/m <sup>3</sup>	micrograms per cubic meter
ACM	asbestos-containing material
AFB	Air Force Base
AFI	Air Force Instruction
AFW	Fort Worth Alliance Airport
AGE	aerospace ground equipment
AGL	above ground level
AHAS	Avian Hazard Advisory System
AICUZ	Air Installation Compatible Use Zone
AMC	Air Mobility Command
ANSI	American National Standards Institute
APE	area of potential effect
APZ	accident potential zone
AT/FP	Anti-Terrorism/Force Protection
BGEPA	Bald and Golden Eagle Protection Act
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	<i>Code of Federal Regulations</i>
CH <sub>4</sub>	methane
CHABA	Committee on Hearing, Bioacoustics and Biomechanics
CO	carbon monoxide
CO <sub>2</sub>	carbon dioxide
CO <sub>2e</sub>	carbon dioxide equivalent
CSM	Clinton-Sherman Industrial Airpark
CWA	Clean Water Act
CZ	clear zone
dB	decibel(s)
dBA	A-weighted decibel
DNL	day-night average sound level
DoD	U.S. Department of Defense
DODI	Department of Defense Instruction
EIS	Environmental Impact Statement
EO	Executive Order
ESA	Endangered Species Act
FAA	Federal Aviation Administration
FICAN	Federal Interagency Committee on Aircraft Noise
FICON	Federal Interagency Committee on Noise
FICUN	Federal Interagency Committee on Urban Noise
FTU	Formal Training Unit
GHG	greenhouse gases
GMV	government motor vehicle
GWP	global warming potential
HAP	hazardous air pollutant
Hz	hertz
ICRMP	Integrated Cultural Resources Management Plan
IMPLAN	Impact Analysis for Planning

## ACRONYMS AND ABBREVIATIONS (Continued)

LAX	Los Angeles International Airport
LBP	lead-based paint
LEED	Leadership in Energy and Environmental Design
MOB 1	First Main Operating Base
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NIPTS	Noise-Induced Permanent Threshold Shift
NLR	noise level reduction
NO <sub>2</sub>	nitrogen dioxide
NO <sub>x</sub>	nitrogen oxides
NRHP	National Register of Historic Places
O <sub>3</sub>	ozone
ODS	ozone depleting substance
PCB	polychlorinated biphenyl
PM <sub>10</sub>	particulate matter less than or equal to 10 microns in diameter
PM <sub>2.5</sub>	particulate matter less than or equal to 2.5 microns in diameter
POV	privately owned vehicle
ppm	parts per million
PSD	Prevention of Significant Deterioration
PTS	Permanent Threshold Shift
ROI	region of influence
SEL	sound exposure level
SHPO	State Historic Preservation Office
SIP	State Implementation Plan
SO <sub>2</sub>	sulfur dioxide
TTS	Temporary Threshold Shift
U.S.C.	<i>United States Code</i>
UCLA	University of California, Los Angeles
UFC	Unified Facilities Criteria
USAF	U.S. Air Force
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service

# APPENDIX A

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## CORRESPONDENCE

This Appendix is contained on the CD-ROM on the back cover of this document.





## APPENDIX A CORRESPONDENCE

## A.1 NOTICE OF INTENT AND NEWSPAPER ADVERTISEMENT



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following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

**DATES:** Consideration will be given to all comments received by April 25, 2013.

**Title, Associated Form and OMB Number:** Third Party Collection Program/Medical Services Account/Other Health Insurance; DD Form 2569; OMB Control Number 0720-TBD (previously OMB Control Number 0704-0323).

**Type of Request:** Extension.

**Number of Respondents:** 2,936,905.

**Responses per Respondent:** 1.

**Annual Responses:** 2,936,905.

**Average Burden per Response:** 3 minutes.

**Annual Burden Hours:** 146,845.

**Needs and Uses:** The information collection requirement is necessary to obtain health insurance policy information used for coordination of health care benefits and billing third-party payers. DoD implemented the Third Party Collection Program (TPCP) in FY87 based on the authority granted in 10 U.S.C. 1095 and implemented by 32 CFR part 220 in accordance with the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) (Pub. L. 99-272, section 2001, April 7, 1986). Under the TPCP, DoD is authorized to collect from third-party payers the cost of inpatient and outpatient services rendered to DoD beneficiaries who have other health insurance. Military treatment facilities are required to make this form available to third-party payers upon request. A third-party payer may not request any other assignment of benefits form from the subscriber.

**Affected Public:** Business or other for-profit; individuals or households.

**Frequency:** Annually or on occasion (when insurance information changes).

**Respondent's Obligation:** Required to Obtain or Retain Benefits.

**OMB Desk Officer:** Mr. John Kraemer. Written comments and recommendations on the proposed information collection should be sent to Mr. Kraemer at the Office of Management and Budget, Desk Officer for DoD, Room 10236, New Executive Office Building, Washington, DC 20503.

You may also submit comments, identified by docket number and title, by the following method:

- **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

**Instructions:** All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy

for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at <http://www.regulations.gov> as they are received without change, including any personal identifiers or contact information.

**DOD Clearance Officer:** Ms. Patricia Toppings.

Written requests for copies of the information collection proposal should be sent to Ms. Toppings at WHS/ESD Information Management Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100.

Dated: March 12, 2013.

**Aaron Siegel,**

*Alternate OSD Federal Register Liaison Officer, Department of Defense.*

[FR Doc. 2013-06852 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-06-P

## DEPARTMENT OF DEFENSE

## Office of the Secretary

[Docket ID: DOD-2012-OS-0097]

## Defense Transportation Regulation, Part IV

**AGENCY:** United States Transportation Command (USTRANSCOM), DoD.

**ACTION:** Announcement.

**SUMMARY:** On September 4, 2012 (77 FR 53873-53874), the Department of Defense published a notice titled Defense Transportation Regulation, Part IV. DoD has completed their review and response to comments received in connection with the Defense Personal Property Program (DP3) Phase III Direct Procurement Method (DPM) business rules. Responses can be found on the Defense Transportation Regulation, Part IV Web site at <http://www.transcom.mil/dtr/part-iv/phaseiii.cfm> (DPM SECTION). All identified changes will be incorporated into the final DPM business rules. The DPM implementation timelines will be based on completion of Defense Personal Property System (DPS) Phase III programming projected for FY17.

**FOR FURTHER INFORMATION CONTACT:** Mr. Jim Teague, United States Transportation Command, TCJ5/4-PI, 508 Scott Drive, Scott Air Force Base, IL 62225-5357; (618) 256-9605.

**SUPPLEMENTARY INFORMATION:** Any subsequent modification(s) to the business rules beyond the above stated changes will be published in the **Federal Register** and incorporated into the Defense Transportation Regulation (DTR) Part IV (DTR 4500.9R). These

program requirements do not impose a legal requirement, obligation, sanction or penalty on the public sector, and will not have an economic impact of \$100 million or more.

## Additional Information

A complete version of the DTR is available via the internet on the USTRANSCOM home page at <http://www.transcom.mil/dtr/part-iv/>.

Dated: March 21, 2013.

**Aaron Siegel,**

*Alternate OSD Federal Register Liaison Officer, Department of Defense.*

[FR Doc. 2013-06854 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-06-P

## DEPARTMENT OF DEFENSE

## Department of the Air Force

**Intent To Prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft**

**AGENCY:** Department of the Air Force, DOD.

**ACTION:** Notice of Intent.

**SUMMARY:** The Air Force is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft. The EIS will assess the potential environmental consequences of bedding down KC-46A tanker aircraft, associated infrastructure and manpower of the FTU and MOB 1 at existing active duty Air Force installations within the continental United States and the no-action alternative.

The FTU squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly, operate, and maintain the KC-46A aircraft. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support.

The proposed basing alternatives for the FTU are:

1. Altus Air Force Base (AFB), Oklahoma
2. McConnell AFB, Kansas

The proposed basing alternatives for MOB 1 are:

1. Altus AFB, Oklahoma
2. Fairchild AFB, Washington
3. Grand Forks AFB, North Dakota
4. McConnell AFB, Kansas

**A.1 NOTICE OF INTENT AND NEWSPAPER ADVERTISEMENT (CONTINUED)**

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Altus AFB and McConnell AFB are being considered for either the FTU or MOB 1 missions; no base would receive both the FTU and MOB 1 missions.

**Scoping:** In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested state and federal agencies and interested members of the public. The Air Force will hold a series of scoping meetings to further solicit input regarding the scope of the proposed action and alternatives.

1. Scoping meetings will be held in the local communities near the alternative basing locations. The scheduled dates, times, locations and addresses for the scoping meetings will also be published in local media a minimum of 15 days prior to the scoping meetings.

1. **Dates:** The Air Force intends to hold scoping meetings from 5:00 p.m. to 8:00 p.m. in the following communities on the following dates:

1. 1. Altus Air Force Base—April 9, 2013 at the Southwest Technology Center, 711 West Tamarack Road, Altus, OK
1. 2. McConnell Air Force Base—April 11, 2013 at the Eugene M. Hughes Metropolitan Complex, 5015 East 29th Street N, Wichita, KS
1. 3. Fairchild Air Force Base—April 16, 2013 at the Lincoln Center, 1316 North Lincoln Street, Spokane, WA
1. 4. Grand Forks Air Force Base—April 18, 2013 at the Ramada Inn, 1205 North 43rd Street, Grand Forks, ND

**SUPPLEMENTARY INFORMATION:** The project Web site provides more information on the EIS and can be used to submit scoping comments; scoping comments may also be submitted to the address below. As a convenience for comments submitted by mail, a comment form is available for download on the Web site. Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted to the Web site or the address listed below by May 17, 2013.

**FOR FURTHER INFORMATION CONTACT:** Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, Illinois 62225–5022; Phone:

**Henry Williams Jr.,**  
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2013–06840 Filed 3–25–13; 8:45 am]

BILLING CODE 5001–10–P

**DEPARTMENT OF DEFENSE****Department of the Air Force****U.S. Air Force Scientific Advisory Board; Notice of Meeting**

**AGENCY:** Department of the Air Force, U.S. Air Force Scientific Advisory Board.

**ACTION:** Meeting notice.

**SUMMARY:** Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102–3.150, the Department of Defense announces that the United States Air Force Scientific Advisory Board (SAB) quarterly meeting will take place on 9 April 2013 at the Eubank Conference Center on Barksdale AFB, LA. The SAB will meet 7:45 a.m.–12:45 p.m. with all sessions closed to the public.

The purpose of this quarterly meeting is to review the status of the FY13 SAB studies directed by the Secretary of the Air Force: countering electro-optical and infrared targeting system threats to our aircraft, disaggregation of satellite mission applications, and communicating in a contested environment. The SAB will receive a presentation on the mission of Air Force Global Strike Command, the host for the SAB's Spring Board Meeting. This board meeting will also include the publication status of the FY12 studies, the latest updates on the ongoing study outbriefs, as well as discussion of the SAB's review of Air Force Research Laboratory (AFRL) science and technology investments. The remaining FY13 Board schedule and internal restructuring options will also be discussed.

In accordance with 5 U.S.C. 552b, as amended, and 41 CFR 102–3.155, this meeting of the United States Air Force Scientific Advisory Board will be closed to the public because it will involve information and matters covered by sections 5 U.S.C. 552b(c)(1) and (2).

Any member of the public wishing to provide input to the United States Air Force Scientific Advisory Board should submit a written statement in accordance with 41 CFR 102–3.140(c) and section 10(a)(3) of the Federal Advisory Committee Act and the procedures described in this paragraph. Written statements can be submitted to the Designated Federal Officer at the address detailed below at any time. Statements being submitted in response to the agenda mentioned in this notice must be received by the Designated

Federal Officer at the address listed below at least five calendar days prior to the meeting which is the subject of this notice. Written statements received after this date may not be provided to or considered by the United States Air Force Scientific Advisory Board until its next meeting. The Designated Federal Officer will review all timely submissions with the United States Air Force Scientific Advisory Board Chairperson and ensure they are provided to members of the United States Air Force Scientific Advisory Board before the meeting that is the subject of this notice.

**FOR FURTHER INFORMATION CONTACT:** The United States Air Force Scientific Advisory Board Executive Director and Designated Federal Officer, Lt Col Derek Lincoln, 240–612–5502, United States Air Force Scientific Advisory Board, 1500 West Perimeter Road, Ste. #3300, Joint Base Andrews, MD 20762, [Derek.Lincoln@pentagon.af.mil](mailto:Derek.Lincoln@pentagon.af.mil).

**Henry Williams Jr.,**  
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2013–06781 Filed 3–25–13; 8:45 am]

BILLING CODE 5001–10–P

**DEPARTMENT OF EDUCATION**

[Docket No. ED–2013–ICCD–0037]

**Agency Information Collection Activities; Comment Request; Upward Bound and Upward Bound Math Science Annual Performance Report**

**AGENCY:** The Office of Postsecondary Education (OPE), Department of Education (ED).


**ACTION:** Notice.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a new information collection.

**DATES:** Interested persons are invited to submit comments on or before May 28, 2013.

**ADDRESSES:** Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at <http://www.regulations.gov> by selecting Docket ID number ED–2013–ICCD–0037 or via postal mail, commercial delivery, or hand delivery. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance

## A.1 NOTICE OF INTENT AND NEWSPAPER ADVERTISEMENT (CONTINUED)

	<p><b>The U.S. Air Force Invites You to Attend Public Scoping Meetings for the Proposed Beddown of KC-46A Tanker Aircraft for the Formal Training Unit and the First Main Operating Base</b></p>
<p align="center"><b>Proposed Action and Alternatives</b></p>	
<p>The United States Air Force (Air Force) is proposing to beddown KC-46A tanker aircraft, associated infrastructure and manpower for the Formal Training Unit (FTU) and the First Main Operating Base (MOB 1) at existing active duty Air Force installations within the continental United States.</p> <p>The proposed basing alternatives for the FTU are Altus Air Force Base (AFB), Oklahoma and McConnell AFB, Kansas. The FTU squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly and operate the KC-46A aircraft. The proposed basing alternatives for MOB 1 are Altus AFB, Oklahoma; Fairchild AFB, Washington; Grand Forks AFB, North Dakota; and McConnell AFB, Kansas. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support. Each candidate base is an alternative. Altus AFB and McConnell AFB are being considered for either the FTU or MOB 1 missions. No base would receive both the FTU and MOB 1 missions. The KC-46A mission could be an additive or replacement mission depending on where the aircraft is located. In addition, the Air Force would use auxiliary airfields in the vicinity of the bases proposed for the FTU mission.</p> <p>The KC-46A aircraft will replace a portion of the aging KC-135 aircraft fleet which have been the Air Force's primary refueling aircraft for more than 50 years. With more refueling capacity and enhanced capabilities, improved efficiency and increased capabilities for cargo and aeromedical evacuation, the KC-46A will provide aerial refueling support to the Air Force, Navy, and Marine Corps, as well as allied nation coalition force aircraft.</p>	
<p align="center"><b>Environmental Impact Statement (EIS)</b></p>	
<p>Pursuant to the National Environmental Policy Act, the Air Force will prepare an EIS, which will assess the potential environmental consequences of the KC-46A aircraft beddown, which will require personnel, facilities to support aircraft operations and pilot and operator requirements.</p>	
<p align="center"><b>Public Scoping Meetings – Please Attend</b></p>	
<p>Public come and go open house scoping meetings are being held to inform the public about the proposed action and alternatives under consideration, and to “scope” important issues to evaluate in the EIS. The meetings will be arranged in a “come and go” open house format with no formal Air Force presentation or opportunity for public testimony. Written comments will be accepted and a comment recording station will be available to accept verbal comments. <b>Your input is valuable and assists the Air Force in making more informed decisions.</b></p>	
<p align="center"><b>Open House: Drop in anytime between 5-8 p.m.</b></p>	
<p>April 9, 2013, Altus AFB, Southwest Technology Center, 711 West Tamarack Road, Altus, OK 73521          April 11, 2013, McConnell AFB, Eugene M. Hughes Metropolitan Complex, Room 180, 5015 E. 29th Street N., Wichita, KS 67260          April 16, 2013, Fairchild AFB, The Lincoln Center, Lincoln Ballroom, 1316 N. Lincoln Street, Spokane, WA 99201          April 18, 2013, Grand Forks AFB, Grand Forks Ramada Inn, 1205 North 43rd Street, 1-29 And Exit 141, Grand Forks, ND 58203</p>	
<p align="center"><b>Public Comment</b></p>	
<p>For more information or to submit written comments, please visit the project website at <a href="http://www.KC-46A-beddown.com">www.KC-46A-beddown.com</a> or contact:</p> <p>Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, Illinois 62225-5022.</p> <p>The Air Force will accept comments at any time during the environmental process. <b>However, to ensure the Air Force has sufficient time to consider public input in the preparation of the draft EIS, please submit comments by May 17, 2013!</b></p>	

## A.2 INTERAGENCY/INTERGOVERNMENTAL COORDINATION FOR ENVIRONMENTAL PLANNING (IICEP)

### A.2.1 IICEP Letter



DEPARTMENT OF THE AIR FORCE  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

27 March 2013

Mr. J. Dale Clark  
Air Force NEPA Center (AFCEC/CZN)  
2261 Hughes Ave, Suite 155  
Lackland AFB TX 78235-9853

Name/Title  
(address being mailed to)  
(address being mailed to)  
(City, State Zip)

Dear {Merged Name from list}

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Altus Air Force Base (AFB), OK and McConnell AFB, KS are proposed for the FTU mission and Altus AFB, McConnell AFB, Grand Forks AFB, ND and Fairchild AFB, WA are proposed for the MOB 1 mission. No base would receive both missions. Additional information on the beddown and EIS process is included in the attached Notice of Intent from the March 26, 2013 Federal Register.

The Air Force will host four public come and go open house scoping meetings in areas near the bases proposed for this action (see attached scoping brochure). The purpose of the meetings and the scoping period is to solicit comments on the scope of environmental issues to be analyzed in depth in the EIS. Public and agency comments provided to the Air Force during the scoping period will be considered in the preparation of the Draft EIS. Additional information can be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

We request your participation and solicit scoping comments on this action. Please provide any comments by May 17, 2013 directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022 or to the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com). Thank you for your assistance in this matter.

Sincerely,

Attachments:

1. Notice of Intent
2. KC-46A FTU and MOB 1 Brochure

SAMPLE LETTER



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following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

**DATES:** Consideration will be given to all comments received by April 25, 2013.  
**Title, Associated Form and OMB Number:** Third Party Collection Program/Medical Services Account/Other Health Insurance; DD Form 2569; OMB Control Number 0720-TBD (previously OMB Control Number 0704-0323).

**Type of Request:** Extension.  
**Number of Respondents:** 2,936,905.  
**Responses per Respondent:** 1.  
**Annual Responses:** 2,936,905.  
**Average Burden per Response:** 3 minutes.

**Annual Burden Hours:** 146,845.  
**Needs and Uses:** The information collection requirement is necessary to obtain health insurance policy information used for coordination of health care benefits and billing third-party payers. DoD implemented the Third Party Collection Program (TPCP) in FY87 based on the authority granted in 10 U.S.C. 1095 and implemented by 32 CFR part 220 in accordance with the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) (Pub. L. 99-272, section 2001, April 7, 1986). Under the TPCP, DoD is authorized to collect from third-party payers the cost of inpatient and outpatient services rendered to DoD beneficiaries who have other health insurance. Military treatment facilities are required to make this form available to third-party payers upon request. A third-party payer may not request any other assignment of benefits form from the subscriber.

**Affected Public:** Business or other for-profit; individuals or households.

**Frequency:** Annually or on occasion (when insurance information changes).  
**Respondent's Obligation:** Required to Obtain or Retain Benefits.

**OMB Desk Officer:** Mr. John Kraemer. Written comments and recommendations on the proposed information collection should be sent to Mr. Kraemer at the Office of Management and Budget, Desk Officer for DoD, Room 10236, New Executive Office Building, Washington, DC 20503.

You may also submit comments, identified by docket number and title, by the following method:

• **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

**Instructions:** All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy

for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at <http://www.regulations.gov> as they are received without change, including any personal identifiers or contact information.

**DOD Clearance Officer:** Ms. Patricia Toppings.  
Written requests for copies of the information collection proposal should be sent to Ms. Toppings at WHS/ESD Information Management Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100.

Dated: March 12, 2013.

Aaron Siegel,  
Alternate OSD Federal Register Liaison Officer, Department of Defense.  
(FR Doc. 2013-06854 Filed 3-25-13; 6:45 am)  
BILLING CODE 5001-06-P

#### DEPARTMENT OF DEFENSE

##### Office of the Secretary

[Docket ID: DOD-2012-OS-0097]

##### Defense Transportation Regulation, Part IV

**AGENCY:** United States Transportation Command (USTRANSCOM), DoD.  
**ACTION:** Announcement.

**SUMMARY:** On September 4, 2012 (77 FR 53873-53874), the Department of Defense published a notice titled Defense Transportation Regulation, Part IV. DoD has completed their review and response to comments received in connection with the Defense Personal Property Program (DP3) Phase III Direct Procurement Method (DPM) business rules. Responses can be found on the Defense Transportation Regulation, Part IV Web site at <http://www.transcom.mil/dtr/part-iv/phaseiii.cfm> (DPM SECTION). All identified changes will be incorporated into the final DPM business rules. The DPM implementation timelines will be based on completion of Defense Personal Property System (DPS) Phase III programming projected for FY17.

**FOR FURTHER INFORMATION CONTACT:** Mr. Jim Teague, United States Transportation Command, TCJ5/4-PI, 508 Scott Drive, Scott Air Force Base, IL 62225-5357; (618) 256-9605.

**SUPPLEMENTARY INFORMATION:** Any subsequent modification(s) to the business rules beyond the above stated changes will be published in the **Federal Register** and incorporated into the Defense Transportation Regulation (DTR) Part IV (DTR 4500.9R). These

program requirements do not impose a legal requirement, obligation, sanction or penalty on the public sector, and will not have an economic impact of \$100 million or more.

#### Additional Information

A complete version of the DTR is available via the internet on the USTRANSCOM home page at <http://www.transcom.mil/dtr/part-iv/>.

Dated: March 21, 2013.

Aaron Siegel,  
Alternate OSD Federal Register Liaison Officer, Department of Defense.  
(FR Doc. 2013-06854 Filed 3-25-13; 8:45 am)  
BILLING CODE 5001-06-P

#### DEPARTMENT OF DEFENSE

##### Department of the Air Force

**Intent To Prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft**

**AGENCY:** Department of the Air Force, DOD.

**ACTION:** Notice of Intent.

**SUMMARY:** The Air Force is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft. The EIS will assess the potential environmental consequences of bedding down KC-46A tanker aircraft, associated infrastructure and manpower of the FTU and MOB 1 at existing active duty Air Force installations within the continental United States and the no-action alternative.

The FTC squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly, operate, and maintain the KC-46A aircraft. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support.

The proposed basing alternatives for the FTU are:

1. Altus Air Force Base (AFB), Oklahoma
2. McConnell AFB, Kansas

The proposed basing alternatives for MOB 1 are:

1. Altus AFB, Oklahoma
2. Fairchild AFB, Washington
3. Grand Forks AFB, North Dakota
4. McConnell AFB, Kansas

## A.2.1 HCEP Letter (Continued)

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Altus AFB and McConnell AFB are being considered for either the FTU or MOB 1 missions; no base would receive both the FTU and MOB 1 missions.

**Scoping:** In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested state and federal agencies and interested members of the public. The Air Force will hold a series of scoping meetings to further solicit input regarding the scope of the proposed action and alternatives.

1. Scoping meetings will be held in the local communities near the alternative basing locations. The scheduled dates, times, locations and addresses for the scoping meetings will also be published in local media a minimum of 15 days prior to the scoping meetings.

1. **Dates:** The Air Force intends to hold scoping meetings from 5:00 p.m. to 8:00 p.m. in the following communities on the following dates:

1. Altus Air Force Base—April 9, 2013 at the Southwest Technology Center, 711 West Tamarack Road, Altus, OK
2. McConnell Air Force Base—April 11, 2013 at the Eugene M. Hughes Metropolitan Complex, 5015 East 29th Street N, Wichita, KS
3. Fairchild Air Force Base—April 16, 2013 at the Lincoln Center, 1316 North Lincoln Street, Spokane, WA
4. Grand Forks Air Force Base—April 18, 2013 at the Ramada Inn, 1205 North 43rd Street, Grand Forks, ND

**SUPPLEMENTARY INFORMATION:** The project Web site provides more information on the EIS and can be used to submit scoping comments; scoping comments may also be submitted to the address below. As a convenience for comments submitted by mail, a comment form is available for download on the Web site. Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted to the Web site or the address listed below by May 17, 2013.

**FOR FURTHER INFORMATION CONTACT:** Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, Illinois 62225-5022; Phone:

Henry Williams Jr.,  
Acting Air Force Federal Register Liaison  
Officer.

[FR Doc. 2013-06840 Filed 3-25-13; 8:45 am]  
BILLING CODE 5001-10-P

## DEPARTMENT OF DEFENSE

## Department of the Air Force

## U.S. Air Force Scientific Advisory Board; Notice of Meeting

**AGENCY:** Department of the Air Force, U.S. Air Force Scientific Advisory Board.

**ACTION:** Meeting notice.

**SUMMARY:** Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102-3.150, the Department of Defense announces that the United States Air Force Scientific Advisory Board (SAB) quarterly meeting will take place on 9 April 2013 at the Eubank Conference Center on Barksdale AFB, LA. The SAB will meet 7:45 a.m.–12:45 p.m. with all sessions closed to the public.

The purpose of this quarterly meeting is to review the status of the FY13 SAB studies directed by the Secretary of the Air Force: countering electro-optical and infrared targeting system threats to our aircraft, disaggregation of satellite mission applications, and communicating in a contested environment. The SAB will receive a presentation on the mission of Air Force Global Strike Command, the host for the SAB's Spring Board Meeting. This board meeting will also include the publication status of the FY12 studies, the latest updates on the ongoing study outbriefs, as well as discussion of the SAB's review of Air Force Research Laboratory (AFRL) science and technology investments. The remaining FY13 Board schedule and internal restructuring options will also be discussed.

In accordance with 5 U.S.C. 552b, as amended, and 41 CFR 102-3.155, this meeting of the United States Air Force Scientific Advisory Board will be closed to the public because it will involve information and matters covered by sections 5 U.S.C. 552b(c)(1) and (2).

Any member of the public wishing to provide input to the United States Air Force Scientific Advisory Board should submit a written statement in accordance with 41 CFR 102-3.140(c) and section 10(a)(3) of the Federal Advisory Committee Act and the procedures described in this paragraph. Written statements can be submitted to the Designated Federal Officer at the address detailed below at any time. Statements being submitted in response to the agenda mentioned in this notice must be received by the Designated

Federal Officer at the address listed below at least five calendar days prior to the meeting which is the subject of this notice. Written statements received after this date may not be provided to or considered by the United States Air Force Scientific Advisory Board until its next meeting. The Designated Federal Officer will review all timely submissions with the United States Air Force Scientific Advisory Board Chairperson and ensure they are provided to members of the United States Air Force Scientific Advisory Board before the meeting that is the subject of this notice.

**FOR FURTHER INFORMATION CONTACT:** The United States Air Force Scientific Advisory Board Executive Director and Designated Federal Officer, Lt Col Derek Lincoln, 240-612-5502, United States Air Force Scientific Advisory Board, 1500 West Perimeter Road, Ste. #3300, Joint Base Andrews, MD 20762, Derek.Lincoln@pentagon.af.mil.

Henry Williams Jr.,  
Acting Air Force Federal Register Liaison  
Officer.

[FR Doc. 2013-06781 Filed 3-25-13; 8:45 am]  
BILLING CODE 5001-10-P

## DEPARTMENT OF EDUCATION

[Docket No. ED-2013-ICCD-0037]

## Agency Information Collection Activities; Comment Request; Upward Bound and Upward Bound Math Science Annual Performance Report

**AGENCY:** The Office of Postsecondary Education (OPE), Department of Education (ED).

**ACTION:** Notice.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a new information collection.

**DATES:** Interested persons are invited to submit comments on or before May 28, 2013.

**ADDRESSES:** Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at <http://www.regulations.gov> by selecting Docket ID number ED-2013-ICCD-0037 or via postal mail, commercial delivery, or hand delivery. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance



The U.S. Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of basing and operating the KC-46A tanker aircraft, associated infrastructure and manpower to establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is holding public scoping meetings to determine the EIS scope (i.e. what will be covered and in what detail) by soliciting comments from interested state and federal agencies and interested members of the public.

## The National Environmental Policy Act (NEPA)

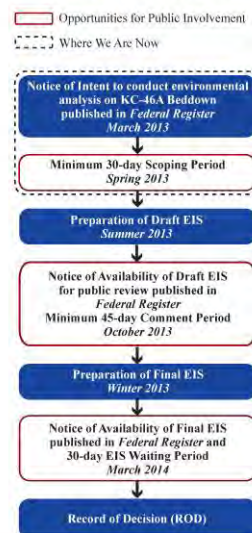
NEPA is our national mandate for making informed decisions while considering environmental impacts. When Federal agencies propose projects having the potential to significantly impact the environment, NEPA requires the following process be undertaken as part of planning before final decisions are made:

- Evaluation and consideration of potential environmental consequences for proposals that may significantly impact the environment, and
- Consideration of public and government agency comments.

Where the potential for significant environmental impacts exists, this evaluation is presented in an EIS, which:

- Identifies and describes the affected environment;
- Evaluates the potential environmental consequences from a range of reasonable alternatives; and
- Identifies environmental permits and specific mitigation measures that could avoid, minimize, or reduce potential environment consequences.

## The EIS Timeline



## Notice of Intent and Scoping

The EIS begins with an NOI, which is published in the *Federal Register* to announce the Air Force's intent to prepare an EIS on the KC-46A FTU and MOB 1 beddown proposed action and alternatives. The NOI is the beginning of the public scoping process, including community scoping meetings, to provide the public and government agencies and entities time to review the proposed action and alternatives.

## A.2.1 HCEP Letter (Continued)

### Proposed Action: FTU and MOB 1 KC-46A Tanker Beddown

The KC-46A EIS will evaluate the potential environmental consequences of two different actions:

1. Beddown of up to eight KC-46A tanker aircraft for one squadron at one base for the FTU; and
2. Beddown of 36 KC-46A aircraft for three squadrons at one base for the MOB 1.

#### The proposed FTU alternative locations are:

- Altus Air Force Base (AFB), Oklahoma
- McConnell AFB, Kansas

The FTU Mission would require the use of various auxiliary airfields in Oklahoma, Texas and Kansas.

#### The proposed MOB 1 alternative locations are:

- Altus AFB, Oklahoma
- Fairchild AFB, Washington
- Grand Forks AFB, North Dakota
- McConnell AFB, Kansas

*The Air Force is in the early stages of the EIS Process and no decision has been made as to final KC-46A FTU and MOB 1 beddown location(s).*

Altus AFB and McConnell AFB are being considered for both the FTU or MOB 1 missions. No base would be selected for both the FTU and MOB 1 missions.



U.S. Map of FTU and MOB 1 Candidate Bases

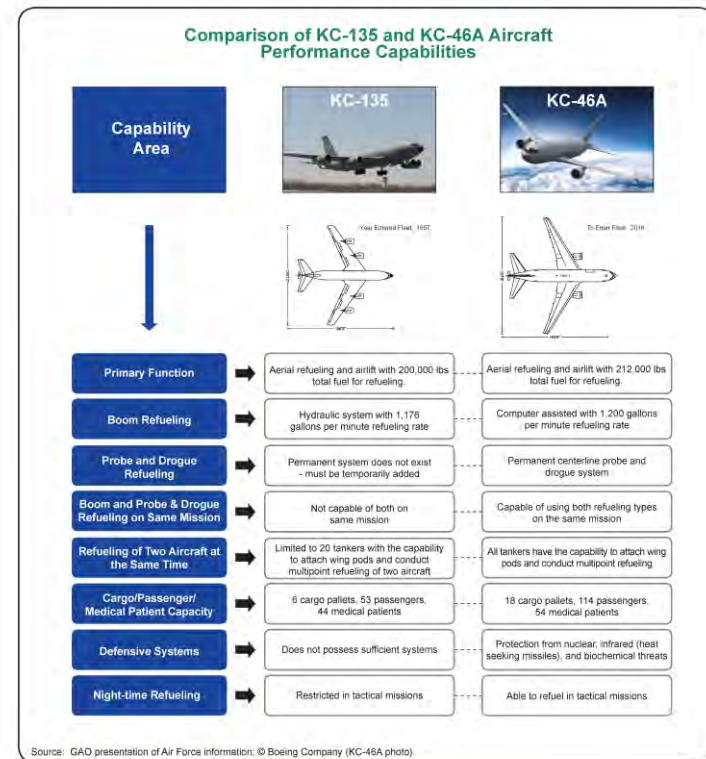
#### No-Action Alternative

Under the No-Action alternative, basing of the KC-46A aircraft would not occur at this time. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location, which will provide a baseline for decision-makers.

### Purpose and Need: Tanker Modernization

The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training.

The purpose of the KC-46A beddown is to provide locations for training and flight operations. The KC-46A tankers are needed to support a high-threat, multi-role warfighting capability to Commanders worldwide. Trained pilots and personnel must be available to meet necessary KC-46A scheduled inventory replenishment dates as older KC-135 tanker aircraft are withdrawn from the inventory.



## A.2.1 HCEP Letter (Continued)

### Environmental Resources

The Air Force understands the potential for the KC-46A FTU and MOB 1 beddown to affect environmental resources. As part of the EIS, the Air Force will analyze potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the inclusion of KC-46A training and flight operation activities. The environmental resource areas, to the right, are currently under consideration in the EIS.

#### Please take this opportunity to:

- ☒ Learn about the proposal,
- ☒ Identify community-specific issues,
- ☒ Make sure you are included on our mailing list.



### Public Scoping Meetings

5:00 p.m. - 8:00 p.m.

#### April 9, 2013

Altus Air Force Base  
Southwest Technology Center  
711 W. Tamarack Rd., Altus, OK

#### April 11, 2013

McConnell Air Force Base  
Eugene M. Hughes Metro Complex Rm. 180  
5015 E. 29th St N., Wichita, KS

#### April 16, 2013

Fairchild Air Force Base  
Lincoln Center, 1316 North Lincoln Street  
Spokane, WA

#### April 18, 2013

Grand Forks Air Force Base  
Ramada Inn, 1205 North 43rd Street  
Grand Forks, ND

### Environmental Resource Areas include:

#### Airspace Operations

- Airspace
- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety



#### Natural Resources

- Geology and Soils
- Surface Water and Groundwater
- Wetlands and Floodplains
- Biological Resources



#### Cultural Resources

- Archaeological, Architectural, and Traditional Resources

#### Human Resources

- Land Use
- Recreation
- Socioeconomics
- Environmental Justice and Protection of Children



#### Community Infrastructure

- Infrastructure (utilities and public services)
- Hazardous Materials and Waste
- Transportation



### How to Submit Comments

Submit comments electronically at  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)  
or by mail before May 17, 2013 to:

Ms. Jean Reynolds  
U.S. Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

## A.2.2 IICEP Mailing List

### A.2.2.1 Altus AFB IICEP Mailing List

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
The Honorable	Frank D.	Lucas	Congressman	U.S. House of Representatives, Oklahoma District 3	Washington	DC	20515
The Honorable	Tom	Coburn	Senator	U.S. Senate, Oklahoma	Washington	DC	20510
The Honorable	John	Cornyn	Senator	U.S. Senate, Texas	Washington	DC	20510
The Honorable	John	Cornyn	Senator	U.S. Senate, Texas	Lubbock	TX	79401
The Honorable	Ted	Cruz	Senator	U.S. Senate, Texas	Washington	DC	20510
The Honorable	Ted	Cruz	Senator	U.S. Senate, Texas	Houston	TX	77002
The Honorable	James M.	Inhofe	Senator	U.S. Senate, Oklahoma	Washington	DC	20510
The Honorable	Rick	Perry	Governor	Texas Governor's Office	Austin	TX	78711
The Honorable	John M.	Fullo	Representative	Texas House of Representatives, District 84	Lubbock	TX	79414
The Honorable	Charles	Perry	Representative	Texas House of Representatives, District 83	Lubbock	TX	79424
The Honorable	Four	Price	Representative	Texas House of Representatives, District 87	Amarillo	TX	79101
The Honorable	Jonathan	Strickland	Representative	Texas House of Representatives, District 92	Austin	TX	78768
The Honorable	Wendy	Davis	Senator	Texas Senate, District 10	Fort Worth	TX	76107
The Honorable	Robert L.	Duncan	Senator	Texas Senate, District 28	Lubbock	TX	79401
The Honorable	Kelly	Hancock	Senator	Texas Senate, District 9	Austin	TX	78711
The Honorable	Kel	Seliger	Senator	Texas Senate, District 31	Amarillo	TX	79105
			Councilmembers	Altus City Council	Altus	OK	73522
			Commissioners of Jackson County	Board of County Commissioners	Altus	OK	73521
			Councilmembers	City of Altus City Council	Altus	OK	73521
The Honorable	Paul	Harpole	Mayor	City of Amarillo Mayor's Office	Amarillo	TX	79101
The Honorable	Betsy	Price	Mayor	City of Fort Worth Mayor's Office	Fort Worth	TX	76102
The Honorable	Glen	Robertson	Mayor	City of Lubbock Mayor's Office	Lubbock	TX	79457
The Honorable	David	Webb	Mayor	City of Altus Mayor's Office	Altus	OK	73521
Ms.	Catherine	Coke		City of Altus, Attorney	Altus	OK	73521
				U.S. Environmental Protection Agency Region 6	Dallas	TX	75202-2733
			Intermountain Regional Office	National Park Service	Denver	CO	80225
Dr.	Benjamin	Tuggle		U.S. Fish and Wildlife Service, Southwest Region	Albuquerque	NM	87103-1306
Executive Director	Zak	Covar	Executive Director	Texas Commission on Environmental Quality	Austin	TX	78711-3087

## A.2.2.1 Altus AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
			Wildlife Division, Nongame & Species Program	Texas Parks and Wildlife Department	Austin	TX	78744
The Honorable	Kenny	Marchant	Congressman	U.S. House of Representatives, Texas District 12	Washington	DC	20515
The Honorable	Kenny	Marchant	Congressman	U.S. House of Representatives, Texas District 12	Irving	TX	75063
The Honorable	Randy	Neugebauer	Congressman	U.S. House of Representatives, Texas District 19	Washington	DC	20515
The Honorable	Randy	Neugebauer	Congressman	U.S. House of Representatives, Texas District 19	Lubbock	TX	79401
The Honorable	Mac	Thornberry	Congressman	U.S. House of Representatives, Texas District 13	Washington	DC	20515
The Honorable	Mac	Thornberry	Congressman	U.S. House of Representatives, Texas District 13	Amarillo	TX	79101
Ms.	Elizabeth	Gray	Administrator	City of Altus	Altus	OK	73521
Ms.	Kelly	Pinion		Lubbock County Clerk's Office	Lubbock	TX	79401
Ms.	Julie	Smith		Potter County Clerk's Office	Amarillo	TX	79105
Ms.	Mary Louise	Garcia		Tarrant County Clerk's Office	Fort Worth	TX	76196
Ms.	Teresa	Bruner	Administrator	Federal Aviation Administration, Southwest Region	Fort Worth	TX	76137
	Brian	Ness	Director	Department of Transportation, Texas	Boise	ID	83707-1129
	Mike	Patterson	Chief of Police	Altus Police Department	Altus	OK	73521
	Shane	Hokett	Director	Military Affairs Committee, Hokett Construction	Blair	OK	73526
	Barbara	Burleson	Planning Director	City of Altus Planning and Development	Altus	OK	73521
	Randall	Harwood	Director	City of Fort Worth Planning and Development	Fort Worth	TX	76102
			Planning Commission & Board of Adjustments	City of Elk City	Elk City	OK	73644
	Kelley	Shaw	Planning Director	City of Amarillo Planning Department	Amarillo	TX	79105-1971
				City of Clinton Planning Department	Clinton	OK	73601
			Code of Ordinances Planning Department	City of Lubbock	Lubbock	TX	79401
Mr.	Tim	Murphy		Altus Police Department	Altus	OK	73521
Sheriff	Roger	Levick		Jackson County Sheriff	Altus	OK	73521
Mr.	Johnny	Freeman		Oklahoma Highway Patrol in Altus	Altus	OK	73521
Mr.	Jantz	Bain	Board Member, Chamber of Commerce	Humphrey's Co-Op	Altus	OK	73521
Mr.	Kerry	Bull	Board Member, Chamber of Commerce	First National Bank	Altus	OK	73521
	Dana	Darby	Board Member, Chamber of Commerce	Altus Christian Academy	Altus	OK	73521

## A.2.2.1 Altus AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
	N. Lee	Doughty	Board Member, Chamber of Commerce	First State Bank	Altus	OK	73521
	Jim	Gover	Board Member, Chamber of Commerce	NBC Oklahoma	Altus	OK	73521
Mr.	Shane	Hokett	Board Member, Chamber of Commerce	Hokett Construction	Blair	OK	73526
Mr.	Rodger	Kerr	Board Member, Chamber of Commerce	Southwest Technology Center	Altus	OK	73521
Colonel	Anthony B.	Krawietz	Board Member, Chamber of Commerce	97th AMW/CC	Altus AFB	OK	73523
Ms.	Mary	Kruska	Board Member, Chamber of Commerce	Tamarack Retirement Center	Altus	OK	73521
Dr.	Joe	Leverett	Board Member	Chamber of Commerce	Altus	OK	73521
	Krystal	Martin	Board Member, Chamber of Commerce	Belles & Beaux	Altus	OK	73521
Board Member	Jim	Norris	Board Member, Chamber of Commerce	Boeing	Altus	OK	73522
Reverend	David	Player	Board Member, Chamber of Commerce	First United Methodist Church	Altus	OK	73521
Board Member	Brenda	Pruitt	Board Member, Chamber of Commerce	Integris Family Care Altus	Altus	OK	73521
Board Member	Danny	Robbins	Board Member, Chamber of Commerce	Agriculture Affairs Committee	Altus	OK	73521
Mayor	David	Webb	Board Member, Chamber of Commerce	City of Altus	Altus	OK	73521
Ms.	Eva	Lucas	Chairman	Committee of 100, Lucas Farms	Elmer	OK	73539
Dr.	Joe	Leverett	President, Chairman	Military Affairs Committee	Altus	OK	73521
				Altus/Quartz Mountain Regional Airport	Altus	OK	73521
				Fort Worth Meacham International Airport	Fort Worth	TX	76106
				Lubbock International Airport	Lubbock	TX	79404
Director	Patrick	Rhodes	Aviation Director	Rick Husband Amarillo International Airport	Amarillo	TX	79111
Director	James	Loomis	Aviation Director	Preston Smith International Airport	Lubbock	TX	79401
				Clinton-Sherman Industrial Airpark/OSIDA	Burns Flat	OK	73624
Mr.	Christopher	Ash		Fort Worth Alliance Airport	Fort Worth	TX	76102

*A.2.2.1 Altus AFB IICEP Mailing List (Continued)*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Mr.	Mark	Haught		Altus High School	Altus	OK	73521
Ms.	Kristy	Greer		Western Oklahoma State College	Altus	OK	73521
Mr.	Lloyd	Colston		Altus Emergency Management Services	Altus	OK	73521
Mr.	Shaun	Cecil		Jackson County EMS	Altus	OK	73521
			Agency Representative Oklahoma Biological Survey	Oklahoma Natural Heritage Inventory	Norman	OK	73019-0575
				Texas Historical Commission	Austin	TX	78711-2276
The Honorable	Frank D.	Lucas	Congressman	U.S. House of Representatives, Oklahoma District 3	Yukon	OK	73099
The Honorable	Tom	Coburn	Senator	U.S. Senate, Oklahoma	Oklahoma City	OK	73102
The Honorable	James M.	Inhofe	Senator	U.S. Senate ,Oklahoma	Enid	OK	73701
The Honorable	Mary	Fallin	Governor	Oklahoma Governor's Office	Oklahoma City	OK	73105
The Honorable	Charles L.	Ortega	Representative	Oklahoma House of Representatives, District 052	Oklahoma City	OK	73105
The Honorable	Charles L.	Ortega	Representative	Oklahoma House of Representatives, District 052	Altus	OK	73521
The Honorable	Todd	Russ	Representative	Oklahoma House of Representatives, District 055	Oklahoma City	OK	73105
The Honorable	Todd	Russ	Representative	Oklahoma House of Representatives, District 055	Cordell	OK	73632
The Honorable	G. Harold	Wright Jr.	Representative	Oklahoma House of Representatives, District 057	Weatherford	OK	73096
The Honorable	G. Harold	Wright Jr.	Representative	Oklahoma House of Representatives, District 057	Oklahoma City	OK	73105
The Honorable	Tom	Ivester	Senator	Oklahoma Senate, District 026	Oklahoma City	OK	73105
The Honorable	Tom	Ivester	Senator	Oklahoma Senate, District 026	Elk City	OK	73648
The Honorable	Mike	Schulz	Senator	Oklahoma Senate, District 038	Oklahoma City	OK	73105
The Honorable	Mike	Schulz	Senator	Oklahoma Senate, District 038	Altus	OK	73521
The Honorable	Teresa	Mullican	Mayor	City of Elk City Mayor's Office	Elk City	OK	73644
Ms.	Cheryl	Snipes	City Clerk	City of Elk City	Elk City	OK	73648
Ms.	Lisa	Anders	City Clerk	Clinton City	Clinton	OK	73601
			Oklahoma Field Office	Bureau of Land Management	Tulsa	OK	74145-1352
			Oklahoma Field Office	Environmental Protection Agency	Tulsa	OK	74128-4629
			Oklahoma Ecological Services Field Office	U.S. Fish and Wildlife Service	Tulsa	OK	74129-1428
				Oklahoma Dept. of Environmental Quality	Oklahoma City	OK	73101-1677
			Environmental Restoration Mission, Tulsa District	U.S. Army Corps of Engineers	Tulsa	OK	74128-4609
Ms.	Jeanette	Hannah	Muskogee Area Director	U.S. Bureau of Indian Affairs	Muskogee	OK	74401

*A.2.2.1 Altus AFB HCEP Mailing List (Continued)*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Mr.	Ron L.	Hillard	State Conservationist Natural Resources Conservation Service	U.S. Department of Agriculture	Stillwater	OK	74075-2655
			Altus Service Center	USDA Natural Resources Conservation Service	Altus	OK	73521-1305
			Southern Plains Regional Office	Bureau of Indian Affairs	Anadarko	OK	73005
				Great Plains State Park	Mountain North Park	OK	73559
Ms.	Margaret	Graham	Consumer Assistance Program	Oklahoma Dept. of Environmental Quality	Oklahoma City	OK	73201
				Oklahoma Dept. of Wildlife Conservation	Oklahoma City	OK	73152
			Agency Representative Natural Resources Section	Oklahoma Dept. of Wildlife Conservation	Oklahoma City	OK	73505
Mr.	Gary	Ridley	Director	Oklahoma Dept. of Transportation	Oklahoma City	OK	73105
				Oklahoma Tourism & Recreation Dept.	Oklahoma City	OK	73102
	Melvina	Heisch	Deputy State Historic Preservation Officer Oklahoma Historical Society	State Historic Preservation Office	Oklahoma City	OK	73105
			Oklahoma Historical Society	State Historic Preservation Office	Oklahoma City	OK	73105

## A.2.2.2 Fairchild AFB HCEP Mailing List

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
The Honorable	Raul R.	Labrador	Congressman	U.S. House of Representatives, Idaho District 1	Coeur d'Alene	ID	83814
The Honorable	Raul R.	Labrador	Congressman	U.S. House of Representatives, Idaho District 1	Washington	DC	20515
The Honorable	Cathy	McMorris Rodgers	Congresswoman	U.S. House of Representatives, Washington District 5	Washington	DC	20515
The Honorable	Cathy	McMorris Rodgers	Congresswoman	U.S. House of Representatives, Washington District 5	Spokane	WA	99201
The Honorable	Maria	Cantwell	Senator	U.S. Senate, Washington	Washington	DC	20510
The Honorable	Maria	Cantwell	Senator	U.S. Senate, Washington	Spokane	WA	99201
The Honorable	Mike	Crapo	Senator	U.S. Senate, Idaho	Washington	DC	20510
The Honorable	Mike	Crapo	Senator	U.S. Senate, Idaho	Coeur d'Alene	ID	83814
The Honorable	Patty	Murray	Senator	U.S. Senate, Washington	Washington	DC	20510
The Honorable	Patty	Murray	Senator	U.S. Senate, Washington	Spokane	WA	99201
The Honorable	James E.	Risch	Senator	U.S. Senate, Idaho	Washington	DC	20510
The Honorable	James E.	Risch	Senator	U.S. Senate, Idaho	Coeur d'Alene	ID	83814
The Honorable	Jay	Inslee	Governor	Washington Governor's Office	Olympia	WA	98504-0002
The Honorable	C.L. "Butch"	Otter	Governor	Idaho Governor's Office	Boise	ID	83720
The Honorable	Larry	Crouse	Representative	Washington House of Representatives, District 4	Olympia	WA	98504-0600
The Honorable	Jeff	Holy	Representative	Washington House of Representatives, District 6	Olympia	WA	98504-0600
The Honorable	Timm	Ormsby	Representative	Washington House of Representatives, District 3	Olympia	WA	98504-0600
The Honorable	Kevin	Parker	Representative	Washington House of Representatives, District 6	Olympia	WA	98504-0600
The Honorable	Marcus	Riccelli	Representative	Washington House of Representatives, District 3	Olympia	WA	98504-0600
The Honorable	Matt	Shea	Representative	Washington House of Representatives, District 4	Olympia	WA	98504-0600
The Honorable	Michael	Baumgartner	Senator	Washington Senate, District 6	Olympia	WA	98504-0406
The Honorable	Andy	Billig	Senator	Washington Senate, District 3	Olympia	WA	98504-0403
The Honorable	Mike	Padden	Senator	Washington Senate, District 4	Olympia	WA	98504-0404
The Honorable	David	Condon	Mayor	City of Spokane Mayor's Office	Spokane	WA	99201
			County Clerk	Spokane County	Spokane	WA	99260
Ms.	Laura Jo	West	Supervisor	Colville National Forest	Colville	WA	99114
Mr.	Dennis E.	McLerran	Regional Administrator	U.S. Environmental Protection Agency, Region 10	Seattle	WA	98101
Ms.	Robyn	Thorson	Regional Director, Pacific Region	U.S. Fish and Wildlife Service	Portland	OR	97232
Director	Jose	Linares	Region 6, Pacific Northwest	U.S. Forest Service	Portland	OR	97204-3440

## A.2.2.2 Fairchild AFB HCEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
			NEPA Program Coordinator	Upper Columbia Fish and Wildlife Office	Spokane Valley	WA	99206
Ms.	Kathryn	Vernon	Regional Administrator, Northwest Mountain	Federal Aviation Administration	Renton	WA	98057
Mr.	John	Townsley	Legislative Director	Washington Pilots Association	Spokane	WA	99205
Mr.	John	Andrews	Regional Director	Washington Department of Fish and Wildlife	Spokane Valley	WA	99216-1566
Mr.	Dave	Duncan	Water Quality	Washington State Department of Ecology	Spokane	WA	99205-1295
Ms.	Lynn	Peterson	Secretary of Transportation	Washington Department of Transportation	Olympia	WA	98504
Mr.	Phil	Wilson	Executive Director	Idaho Department of Transportation	Austin	TX	78701
Dr.	Allyson	Brooks	State Historic Preservation Officer	Department of Archaeology & Historic Preservation	Olympia	WA	98501
Mr.	Joe	Southwell	Air Quality Engineer	Spokane Regional Clean Air Agency	Spokane	WA	99207-5384
				City of Airway Heights Planning Department	Airway Heights	WA	99001
Mr.	Scott	Chesney	Planning Director	City of Spokane Planning and Development	Spokane	WA	99201
Mr.	Dave	Yadon	Planning Director	City of Coeur d'Alene Planning Commission	Coeur d'Alene	ID	83814
Mr.	Derrick	Braaten	City Planner	City of Airway Heights Planning Department	Airway Heights	WA	99001
			Public Works Building and Planning	Spokane County Planning Department	Spokane	WA	99260
Ms.	E. Susan	Meyer		Spokane Transit Authority	Spokane	WA	99201-2686
Mr.	Rob	Higgins		Spokane Association of Realtors	Spokane	WA	99205-4206
Mr.	David	Holmes		Spokane International Airport	Spokane	WA	99224
				Washington Air National Guard	Fairchild AFB	WA	99011-9621
Mr.	Terrance	Brown		Spokane Community College	Spokane	WA	99217-5410
				Blair Elementary School	Fairchild AFB	WA	99011
Ltc	Russell	Pritchard, Jr.		Gonzaga University	Spokane	WA	99258-0001
Mr.	Terry	Munther		Medical Lake School District	Medical Lake	WA	99022-9737
				Park College 92 MSS/DPE	Fairchild AFB	WA	99011-9469

## A.2.2.3 Grand Forks AFB IICEP Mailing List

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
The Honorable	Kevin	Cramer	Congressman	U.S. House of Representatives, North Dakota	Washington	DC	20515
The Honorable	Kevin	Cramer	Congressman	U.S. House of Representatives, North Dakota	Grand Forks	ND	58202
The Honorable	Heidi	Heitkamp	Senator	U.S. Senate, North Dakota	Washington	DC	20510
The Honorable	Heidi	Heitkamp	Senator	U.S. Senate, North Dakota	Grand Forks	ND	58201
The Honorable	John	Hoeven	Senator	U.S. Senate, North Dakota	Washington	DC	20510
The Honorable	John	Hoeven	Senator	U.S. Senate, North Dakota	Grand Forks	ND	58201
The Honorable	Jack	Dalrymple	Governor	North Dakota Governor's Office	Bismarck	ND	58505-0001
The Honorable	Eliot	Glasheim	Representative	North Dakota House of Representatives, District 18	Grand Forks	ND	58203-3203
The Honorable	Mark S.	Owens	Representative	North Dakota House of Representatives, District 17	Grand Forks	ND	58201-2820
The Honorable	Mark S.	Sanford	Representative	North Dakota House of Representatives, District 17	Grand Forks	ND	58201-2904
The Honorable	Marie	Strinden	Representative	North Dakota House of Representatives, District 18	Grand Forks	ND	58201-4765
The Honorable	Ray	Holmberg	Senator	North Dakota State Senate, District 17	Grand Forks	ND	58201-7717
The Honorable	Constance	Triplett	Senator	North Dakota State Senate, District 18	Grand Forks	ND	58206-5178
Commissioner	Harvey	Hope	Commissioner	Cavalier County Commission	Langdon	ND	58249
Mr.	Hal	Gershman	Councilmember	Grand Forks City Council	Grand Forks	ND	58203
Mr.	Eliot	Glassheim	Councilmember	Grand Forks City Council	Grand Forks	ND	58203
			Commissioners	Grand Forks Commissioners	Grand Forks	ND	58201-4715
Ms.	Constance	Triplett	Commission Chair	Grand Forks County Board of Commissioners	Grand Forks	ND	58206-6372
Mr.	Gary	Malm	Commission Chairman	Grand Forks County Commissioners	Grand Forks	ND	58201
The Honorable	Lynn	Stauss	Mayor	City of East Grand Forks Mayor's Office	East Grand Forks	MN	56721
Commissioners			Commissioners	Polk County Board of County Commissioners	Crookston	MN	56716
The Honorable	Michael	Brown	Mayor	City of Grand Forks	Grand Forks	ND	58206-5200
Ms.	Vivian	Drees	Clerk/Treasurer	Grand Forks County	Grand Forks	ND	58201
Mr.	Robert W.	Johnson	Commissioner	Bureau of Reclamation	Washington	DC	20240-0001
Mr.	Dennis E.	Breitzman	Area Manager	Bureau of Reclamation, Dakotas Area Office	Bismarck	ND	58501
Mr.	Michael J.	Ryan	Regional Director	Bureau of Reclamation, Great Plains Regional Office	Billings	MT	59107-6900
Mr.	Horst	Greczmiel		Council on Environmental Quality	Washington	DC	20501
Ms.	Dana	Allen		U.S. Environmental Protection Agency, Region 8	Denver	CO	80202-1129
Mr.	James	Hanley		U.S. Environmental Protection Agency, Region 9	Denver	CO	80202-1129
Acting Regional Administrator	Carol	Rushin	Acting Regional Administrator	U.S. Environmental Protection Agency, Region 10	Denver	CO	80202-1129

## A.2.2.3 Grand Forks AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Regional Director	Noreen	Walsh	Regional Director	U.S. Fish and Wildlife Service	Lakewood	CO	80228
Mr.	Jeff	Towner		U.S. Fish and Wildlife Service, North Dakota Field Office	Bismarck	ND	58501-7926
Mr.	Jim	Alfonso		U.S. Fish and Wildlife Service	Devils Lake	ND	58301
Mr.	Shawn	Bayless		U.S. Fish and Wildlife Service	Bismarck	ND	58501
Mrs.	Michael	Ramirez		U.S. Fish and Wildlife Service	Devils Lake	ND	58301
Ms.	Diane	Blair		Base Realignment Impact Center	Grand Forks	ND	58201
			Deputy Regional Director	Bureau of Indian Affairs, Great Plains Regional Office	Aberdeen	SD	57401-4384
Mr.	Kelly	Nelson		FAA Minneapolis Air Route Traffic Control Center	Minneapolis	MN	55450-2704
Mr.	Barry	Cooper	Regional Administrator	Federal Aviation Administration, Great Lakes Region	Des Plaines	IL	60018
Mr.	Steve	Obenauer		Federal Aviation Administration	Bismarck	ND	58504
Mr.	Dan	Cimarosti		U.S. Army Corps of Engineers	Bismarck	ND	58504
Mr.	Jason M.	Lambrecht	Supv Hydrologist	U.S. Geological Survey	Grand Forks	ND	58203
Mr.	Don	Kilma		Advisory Council on Historic Preservation	Washington	DC	20004
	L.	Noehre	District Engineer, Grand Forks	North Dakota Department of Transportation, District 6	Grand Forks	ND	58208-3077
	W.	Swenson	District Engineer, Devils Lake	North Dakota Department of Transportation, District 3	Devils Lake	ND	58301-3628
	J R	Flores	State Conservationist	Natural Resources Conservation Service	Bismarck	ND	58501
Mr.	Brenton	Sampson			Pikeville	NC	27863
Mr.	Roger	Johnson	Agriculture Commissioner	North Dakota Department of Agriculture	Bismarck	ND	58505-0020
Mr.	Larry	Kotchman	State Forester	North Dakota Forest Service	Bottineau	ND	58318
Mr.	Jeff	Faught		North Dakota Game and Fish Department	Bismarck	ND	58504
	Terry	Steinwand	Director	North Dakota Game and Fish Department	Bismarck	ND	58501-5095
Mr.	Douglass	Prchal	Director	North Dakota Parks and Recreation Department	Bismarck	ND	58503-0649
Mr.	Larry	Knudtson	Research Analyst	North Dakota State Water Commission	Bismarck	ND	58505-0850
Mr.	Grant	Levi	Interim Director	North Dakota Department of Transportation	Bismarck	ND	58505-0700
			Division of Community Services	North Dakota Department of Commerce	Bismarck	ND	58502-2057
Dr.	Terry	Dwelle		North Dakota Department of Health	Bismarck	ND	58505-0200
Mr.	Paul	Govig	Director, Division of Community Services	North Dakota Department of Commerce	Bismarck	ND	58503

## A.2.2.3 Grand Forks AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Mr.	Jeff	Rotenberger	Energy and Information Security Program Manager	North Dakota Energy Department	Bismarck	ND	58502-2057
	Merlan	Paaverud, Jr.	State Historic Preservation Officer	State Historical Society of North Dakota	Bismarck	ND	58505-0830
Mr.	Curt	Kreun		City of Grand Forks	Grand Forks	ND	58201
Mr.	Mark R.	Fisher	District Wildlife Biologist	Devils Lake Wetland Management District	Devils Lake	ND	58301
Mr.	Barry	Wilfahrt	President & CEO	Grand Forks Chamber of Commerce	Grand Forks	ND	58203
	Klause	Thiessen	President	Economic Development Corporation, Grand Forks Region	Grand Forks	ND	58201
	Lane	Magnunson	County Planner	County of Grand Forks Planning & Zoning	Grand Forks	ND	58201
Mr.	Brad	Gengler	City Planner	City of Grand Forks Planning Department	Grand Forks	ND	58203
Mr.	Eric	Giltner		Small Business Administration	Grand Forks	ND	58203
Mr.	Duaine	Ash			Devils Lake	ND	58301
Mr.	Paul	Brusseau			Walhalla	ND	58282
Mr.	David	Kragnes			Felton	MN	56536
Ms.	Anna	Spivey			Langdon	ND	58249
Mr.	Skip	Greenberg		Greenberg Realty	Grand Forks	ND	58201
Mr.	Danny	Holwerda	Chairperson	GF-EGF Chamber of Military Appreciation Committee	Grand Forks	ND	58203
Mr.	John	Colter		Grand Forks Board of Realtors	Grand Forks	ND	58201
				Alpine Aviation, Inc	Provo	UT	84601
Mr.	Ken	Schuler		Civil Air Patrol (CAP)	Grand Forks	ND	58201
Mr.	Roger	McGrath		Federal Aviation Administration, Southwest Region	Fort Worth	TX	76137
Mr.	John H.	Page, Jr.	Air Traffic Organization	Federal Aviation Administration	Washington	DC	20591
Mr.	David	Cink		Federal Aviation Administration	Grand Forks	ND	58203
				GFK Flight Support	Grand Forks	ND	58203
Mr.	Steve	Johnson	Facility Manager	Grand Forks Regional Airport Authority	Grand Forks	ND	58203
				Grand Forks Regional Airport Authority	Grand Forks	ND	58203
				National Air Transportation Assoc.	Alexandria	VA	22302
				National Association of State Aviation Officials	Silver Spring	MD	20910-5600
				National Association of State Aviation Officials Washington National Airport	Washington	DC	20001
				National Business Aviation Assoc.	Washington	DC	20036

*A.2.2.3 Grand Forks AFB IICEP Mailing List (Continued)*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Ms.	Cindy	Schreiber-Beck	Executive Director	North Dakota Aerial Agricultural Association	Wahpeton	ND	58075
Mr.	Gary R.	Ness	Executive Director	North Dakota Aeronautics Commission	Bismarck	ND	58502-5020
Mr.	Robert	Simmers	Chairman	North Dakota Aviation Association	Bismarck	ND	58504
Mr.	Darrel	Pittman	Chairman	North Dakota Aviation Council	Bismarck	ND	58503-6409
Mr.	Rod	Brekken	President	North Dakota Aviation Mechanics Association	Casselton	ND	58012
				North Dakota National Guard	Bismarck	ND	58502
Mr.	Paul	Hanson	President	North Dakota Pilots Association	Emerado	ND	58228
Mr.	Trent	Teets	Chairman	North Dakota Sports Aviation Association	West Fargo	ND	58078
Mr.	Ben	Trapnell		University of North Dakota Aerospace	Grand Forks	ND	58202-9007
Ms.	Vicki	Ericson		Grand Forks School Board	Grand Forks	ND	58201-8835
Mr.	Bob	Concannon		University of North Dakota	GFAFB	ND	58204
General	Al	Palmer		University of North Dakota	Grand Forks	ND	58203
			USPFO ND Camp Grafton	North Dakota Army National Guard	Devils Lake	ND	58301-8500
Mr.	David	Sprynczynatyk	Adjutant General	North Dakota Department of Emergency Services	Bismarck	ND	58506
	Arlen	Lancaster	Chief	Natural Resources Conservation Service	Washington	DC	20250
Ms.	Mike	Myers	Director	U.S. Geological Survey National Center	Reston	VA	20192
Mr.	Larry	Taborsky	Director	National Association of State Aviation Officials	Bismarck	ND	58502
Ms.	Deborah A.	Painte		Indian Affairs Commission	Bismarck	ND	58505-0300

A.2.2.4 *McConnell AFB IICEP Mailing List*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
The Honorable	Mike	Pompeo	Congressman	U.S. House of Representatives, Kansas District 4	Washington	DC	20515
The Honorable	Mike	Pompeo	Congressman	U.S. House of Representatives, Kansas District 4	Wichita	KS	67207
The Honorable	Jerry	Moran	Senator	U.S. Senate, Kansas	Washington	DC	20510
The Honorable	Jerry	Moran	Senator	U.S. Senate, Kansas	Wichita	KS	67226
The Honorable	Pat	Roberts	Senator	U.S. Senate, Kansas	Washington	DC	20510
The Honorable	Pat	Roberts	Senator	U.S. Senate, Kansas	Wichita	KS	67202
The Honorable	Lynn	Jenkins	Congresswoman	U.S. House of Representatives, Kansas District 2	Washington	DC	20515
The Honorable	Lynn	Jenkins	Congresswoman	U.S. House of Representatives, Kansas District 2	Topeka	KS	66606
The Honorable	Sam	Brownback	Governor	Kansas Governor's Office	Topeka	KS	66603-3434
The Honorable	John	Alcala	Representative	Kansas House of Representatives, District 57	Topeka	KS	66612
The Honorable	Nile	Dillmore	Representative	Kansas House of Representatives, District 92	Topeka	KS	66612
The Honorable	Gail	Finney	Representative	Kansas House of Representatives, District 84	Topeka	KS	66612
The Honorable	Ramon	Gonzalez	Representative	Kansas House of Representatives, District 47	Topeka	KS	66612
The Honorable	Harold	Lane	Representative	Kansas House of Representatives, District 58	Topeka	KS	66612
The Honorable	Annie	Tietze	Representative	Kansas House of Representatives, District 56	Topeka	KS	66612
The Honorable	Ponka-We	Victors	Representative	Kansas House of Representatives, District 103	Topeka	KS	66612
The Honorable	Les	Donovan	Senator	Kansas State Senate, District 27	Topeka	KS	66612
The Honorable	Oletha	Faust-Goudeau	Senator	Kansas State Senate, District 29	Topeka	KS	66612
The Honorable	Anthony	Hensley	Senator	Kansas State Senate, District 19	Topeka	KS	66612
The Honorable	Laura	Kelly	Senator	Kansas State Senate, District 18	Topeka	KS	66612
The Honorable	Ty	Masterson	Senator	Kansas State Senate, District 16	Topeka	KS	66612
The Honorable	Carolyn	McGinn	Senator	Kansas State Senate, District 31	Topeka	KS	66612
The Honorable	Mike	Peterson	Senator	Kansas State Senate, District 28	Topeka	KS	66612
The Honorable	Vicki	Schmidt	Senator	Kansas State Senate, District 20	Topeka	KS	66612
The Honorable	Susan	Wagle	Senator	Kansas State Senate, District 30	Topeka	KS	66612
The Honorable	Carl	Brewer	Mayor	City Council, Mayor	Wichita	KS	67202
The Honorable	Carl	Brewer	Mayor	City of Wichita Mayor's Office	Wichita	KS	67202
The Honorable	William	Bunten	Mayor	City of Topeka Mayor's Office	Topeka	KS	66603
Mr.	Kelly	Arnold	County Clerk	Sedgewick County	Wichita	KS	67203
Ms.	Cyndi	Beck	County Clerk	Shawnee County	Topeka	KS	66603
			Rocky Mountain Region	U.S. Forest Service	Golden	CO	80401

## A.2.2.4 McConnell AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Mr.	Joe	Cothorn	Environmental Review Coordinator	U.S. Environmental Protection Agency, Region VII	Kansas City	KS	66101
Ms.	Noreen	Walsh	Regional Director	U.S. Fish and Wildlife Service	Lakewood	CO	80228
Mr.	Joe	Miniace	Regional Administrator	Federal Aviation Administration, Central Region	Kansas City	MO	64106-2641
Mr.	John	Mitchell	Director, Division of Environment	Kansas Department of Health and Environment	Topeka	KS	66612-1367
			Operations Office	USFWS Kansas Dept. of Wildlife, Parks & Tourism	Pratt	KS	67124
Mr.	Mike	King	Secretary of Transportation	Kansas Department of Transportation	Topeka	KS	66603-3754
Ms.	Jennie	Chinn	Executive Director	Kansas State Historical Society, State Historic Preservation Office	Topeka	KS	66615-1099
The Honorable	Dion	Avello	Mayor	City of Derby Mayor's Office	Derby	KS	67037-3533
Mr.	Cody	Bird	City Planner	City of Derby Planning Department	Derby	KS	67037-3533
Ms.	Allison	Moeding	Director	City of Derby Economic Development	Derby	KS	67037-3533
Ms.	Kathy	Sexton	City Manager	City of Derby City Manager's Office	Derby	KS	67037-3533
Mr.	Dan	Squires	City Engineer	City of Derby	Derby	KS	67037-3533
	Shawn	Maloney	Interim Environmental Health Manager	City of Wichita, Office of Environmental Health	Wichita	KS	67214
Ms.	Kristi	Zukovich		Sedgwick County Community Development	Wichita	KS	67203
Mr.	Bill	Fiander	Director	City of Topeka Planning Department	Topeka	KS	66607
				Shawnee County Planning Department	Topeka	KS	66618
				Wichita-Sedgwick County Planning Department	Wichita	KS	67202
Mr.	Bill	Buchanan		Sedgwick County Manager's Office	Wichita	KS	67203
Mr.	John	Schlegel	Director of Planning	Wichita Sedgwick County	Wichita	KS	67202-1688
	Marty	Miller	Executive Director	Botanica	Wichita	KS	67203-3199
	Jan	Harper	Chief Financial Officer	Wichita Art Museum	Wichita	KS	67203-3296
Mr.	Bernie	Koch		Kansas Economic Progress Council	Topeka	KS	66612
			Forbes Field	Metropolitan Topeka Airport Authority	Topeka	KS	66619
Mr.	Victor D.	White	Director of Airports	Wichita Airport Authority	Wichita	KS	67209
The Honorable	Judith	Loganbill	Representative	Kansas House of Representatives, District 86	Topeka	KS	66612
The Honorable	Jean	Schodorf	Senator	Kansas Senate, District 25	Topeka	KS	66612
The Honorable	Annie	Mah	Representative	Kansas House of Representatives, District 53	Topeka	KS	66612
The Honorable	Benny	Boman	Representative	Kansas House of Representatives, District 95	Topeka	KS	66612
The Honorable	Dick	Kelsey	Senator	Kansas Senate, District 26	Topeka	KS	66612

## A.2.2.4 McConnell AFB IICEP Mailing List (Continued)

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
The Honorable	Frank D.	Lucas	Congressman	U.S. House of Representatives, Oklahoma District 3	Yukon	OK	73099
The Honorable	Tom	Coburn	Senator	U.S. Senate, Oklahoma	Oklahoma City	OK	73102
The Honorable	James M.	Inhofe	Senator	U.S. Senate, Oklahoma	Enid	OK	73701
The Honorable	Mary	Fallin	Governor	Oklahoma Governor's Office	Oklahoma City	OK	73105
The Honorable	Charles L.	Ortega	Representative	Oklahoma House of Representatives, District 52	Oklahoma City	OK	73105
The Honorable	Charles L.	Ortega	Representative	Oklahoma House of Representatives, District 52	Altus	OK	73521
The Honorable	Todd	Russ	Representative	Oklahoma House of Representatives, District 55	Oklahoma City	OK	73105
The Honorable	Todd	Russ	Representative	Oklahoma House of Representatives, District 55	Cordell	OK	73632
The Honorable	G. Harold	Wright Jr.	Representative	Oklahoma House of Representatives, District 57	Weatherford	OK	73096
The Honorable	G. Harold	Wright Jr.	Representative	Oklahoma House of Representatives, District 57	Oklahoma City	OK	73105
The Honorable	Tom	Ivester	Senator	Oklahoma Senate, District 026	Oklahoma City	OK	73105
The Honorable	Tom	Ivester	Senator	Oklahoma Senate, District 026	Elk City	OK	73648
The Honorable	Mike	Schulz	Senator	Oklahoma Senate, District 038	Oklahoma City	OK	73105
The Honorable	Mike	Schulz	Senator	Oklahoma Senate, District 038	Altus	OK	73521
The Honorable	Teresa	Mullican	Mayor	City of Elk City Mayor's Office	Elk City	OK	73644
Ms.	Cheryl	Snipes	City Clerk	City of Elk City	Elk City	OK	73648
Ms.	Lisa	Anders	City Clerk	Clinton City	Clinton	OK	73601
			Oklahoma Field Office	Bureau of Land Management	Tulsa	OK	74145-1352
			Oklahoma Field Office	Environmental Protection Agency	Tulsa	OK	74128-4629
			Oklahoma Field Office	U.S. Fish and Wildlife Service	Tulsa	OK	74129-1428
				Oklahoma Dept. of Environmental Quality	Oklahoma City	OK	73101-1677
			Environmental Restoration Mission Tulsa District	U.S. Army Corps of Engineers	Tulsa	OK	74128-4609
Ms.	Jeanette	Hannah	Muskogee Area Director	Muskogee Area Office U.S. Bureau of Indian Affairs	Muskogee	OK	74401
Mr.	Ron L.	Hillard	State Conservationist	Natural Resources Conservation Service U.S. Department of Agriculture	Stillwater	OK	74075-2655
			Altus Service Center	USDA Natural Resources Conservation Service	Altus	OK	73521-1305
			Southern Plains Regional Office	Bureau of Indian Affairs	Anadarko	OK	73005

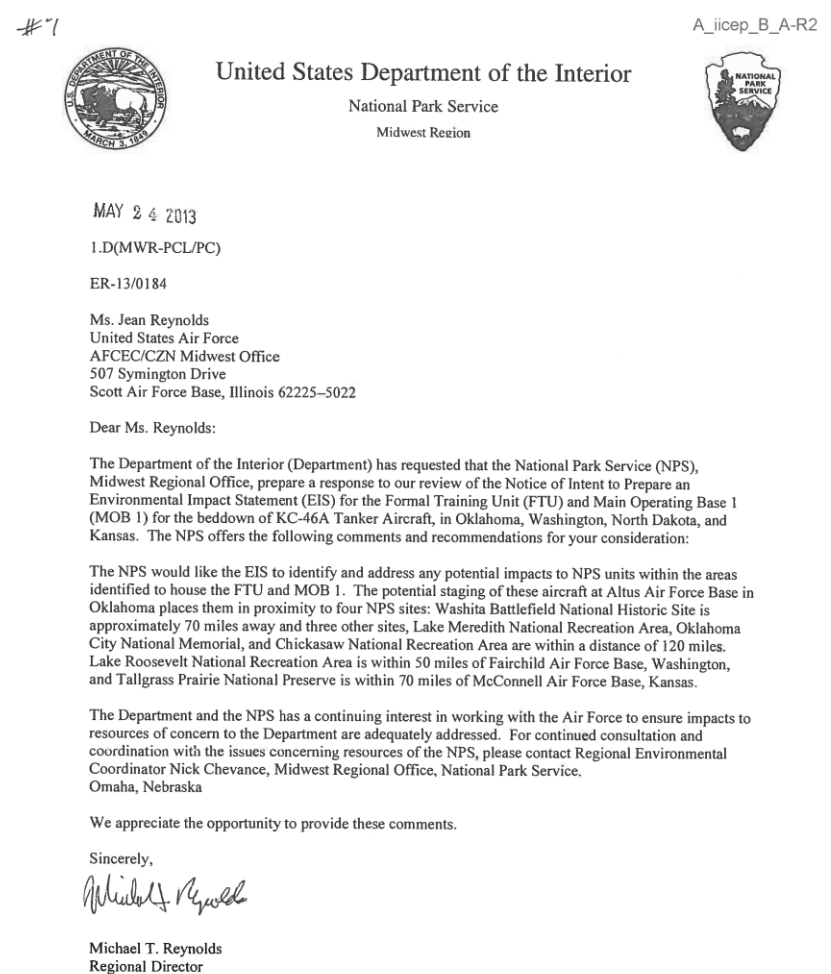
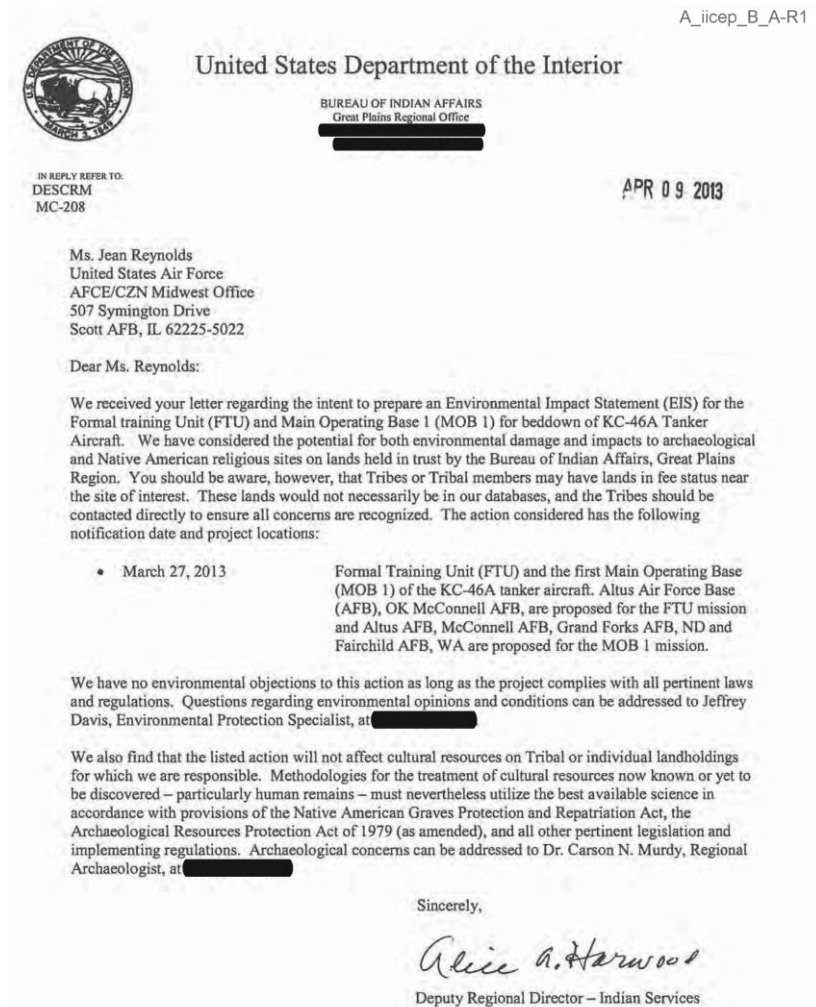
*A.2.2.4 McConnell AFB IICEP Mailing List (Continued)*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
				Great Plains State Park	Mountain North Park	OK	73559
Ms.	Margaret	Graham	Consumer Assistance Program	Oklahoma Dept. of Environmental Quality	Oklahoma City	OK	73201
				Oklahoma Dept. of Wildlife Conservation	Oklahoma City	OK	73152
			Agency Representative	Natural Resources Section Oklahoma Dept. of Wildlife Conservation	Oklahoma City	OK	73505
Mr.	Gary	Ridley	Director	Oklahoma Dept. of Transportation	Oklahoma City	OK	73105
				Oklahoma Tourism & Recreation Dept.	Oklahoma City	OK	73102
	Melvina	Heisch	Deputy State Historic Preservation Officer	Oklahoma Historical Society State Historic Preservation Office	Oklahoma City	OK	73015
				Oklahoma Historical Society State Historic Preservation Office	Oklahoma City	OK	73105

*A.2.2.5 All Bases IICEP Mailing List*

Salutation	First Name	Last Name	Title	Organization	City	State	Zip
Mr.	Stephen L.	Johnson	Administrator	U.S. Environmental Protection Agency	Washington	DC	20460
Mr.	Richard	Sanderson		U.S. Environmental Protection Agency	Washington	DC	20460
Mr.	Michael D.	Huerta	Administrator	Federal Aviation Administration	Washington	DC	20591

### A.2.3 Altus AFB HCEP Responses



### A.2.3 Altus AFB HCEP Responses (Continued)

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A\_iicep\_B\_A-R3

#### Oklahoma State Senate

Tom Ivester  
ASSISTANT DEMOCRATIC FLOOR LEADER



April 11, 2013

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds:

As a State Senator representing a large portion of western Oklahoma, I support the selection of Altus Air Force Base with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB) of the KC-46A tanker aircraft.

Altus Air Force Base is the site for the KC-135 FTU mission. They currently use auxiliary airfields at Clinton-Sherman Industrial Airpark, Oklahoma; Fort Worth Alliance Airport, Texas; Lubbock Preston Smith International Airport, Texas; and Rick Husband Amarillo International Airport, Texas. The effect of the KC-135 FTU mission on environmental resources was fully examined before its installation. The addition of the KC-46A tanker aircraft FTU or MOB will not change the previous environmental impact conclusion.

Your consideration of Altus Air Force Base is appreciated.

Respectfully,

Tom Ivester  
State Senate

Bryan W. Shaw, Ph.D., Chairman  
Carlos Rubinstein Commissioner  
Toby Baker, Commissioner  
Zak Covar, Executive Director



#### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

April 17, 2013

Ms. Jean Reynolds  
United States Air Force  
507 Symington Drive  
Scott AFB, IL 62225-5022

Re: TCEQ Grant and Texas Review and Comment System (TRACS) #2013-227, Joint Base San Antonio Lackland, Project Main Operating Base

Dear Ms. Reynolds:

The Texas Commission on Environmental Quality (TCEQ) has reviewed the above-referenced project and offers the following comments:

Although any demolition, construction, rehabilitation or repair project may produce dust and particulate emissions, these actions are not anticipated to result in a significant impact upon air quality standards. Any dust and particulate emission should be easily controlled by using standard dust mitigation techniques. Any debris or waste disposal should be at an appropriately authorized disposal facility.

We recommend the environmental assessment address actions that will be taken to prevent surface and groundwater contamination.

Thank you for the opportunity to review this project. If you have any questions, please contact Ms. Melanie Aldana at [REDACTED]

Sincerely,

Minor B. Hibbs, P.E.  
Special Assistant to Chief Engineer

## A.2.4 Fairchild AFB HCEP Responses

F\_iicep\_B\_A-R1



### United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional Office

IN REPLY REFER TO:  
DESCRM  
MC-208

APR 09 2013

Ms. Jean Reynolds  
United States Air Force  
AFCE/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds:

We received your letter regarding the intent to prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for beddown of KC-46A Tanker Aircraft. We have considered the potential for both environmental damage and impacts to archaeological and Native American religious sites on lands held in trust by the Bureau of Indian Affairs, Great Plains Region. You should be aware, however, that Tribes or Tribal members may have lands in fee status near the site of interest. These lands would not necessarily be in our databases, and the Tribes should be contacted directly to ensure all concerns are recognized. The action considered has the following notification date and project locations:

- March 27, 2013 Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Altus Air Force Base (AFB), OK McConnell AFB, are proposed for the FTU mission and Altus AFB, McConnell AFB, Grand Forks AFB, ND and Fairchild AFB, WA are proposed for the MOB 1 mission.

We have no environmental objections to this action as long as the project complies with all pertinent laws and regulations. Questions regarding environmental opinions and conditions can be addressed to Jeffrey Davis, Environmental Protection Specialist, at [REDACTED]

We also find that the listed action will not affect cultural resources on Tribal or individual landholdings for which we are responsible. Methodologies for the treatment of cultural resources now known or yet to be discovered – particularly human remains – must nevertheless utilize the best available science in accordance with provisions of the Native American Graves Protection and Repatriation Act, the Archaeological Resources Protection Act of 1979 (as amended), and all other pertinent legislation and implementing regulations. Archaeological concerns can be addressed to Dr. Carson N. Murdy, Regional Archaeologist, at [REDACTED]

Sincerely,

*Alice A. Harwood*  
Deputy Regional Director – Indian Services

#1



### United States Department of the Interior

National Park Service  
Midwest Region

F\_iicep\_B\_A-R2



MAY 24 2013

1.D(MWR-PCL/PC)

ER-13/0184

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott Air Force Base, Illinois 62225-5022

Dear Ms. Reynolds:

The Department of the Interior (Department) has requested that the National Park Service (NPS), Midwest Regional Office, prepare a response to our review of the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the beddown of KC-46A Tanker Aircraft, in Oklahoma, Washington, North Dakota, and Kansas. The NPS offers the following comments and recommendations for your consideration:

The NPS would like the EIS to identify and address any potential impacts to NPS units within the areas identified to house the FTU and MOB 1. The potential staging of these aircraft at Altus Air Force Base in Oklahoma places them in proximity to four NPS sites: Washita Battlefield National Historic Site is approximately 70 miles away and three other sites, Lake Meredith National Recreation Area, Oklahoma City National Memorial, and Chickasaw National Recreation Area are within a distance of 120 miles. Lake Roosevelt National Recreation Area is within 50 miles of Fairchild Air Force Base, Washington, and Tallgrass Prairie National Preserve is within 70 miles of McConnell Air Force Base, Kansas.

The Department and the NPS has a continuing interest in working with the Air Force to ensure impacts to resources of concern to the Department are adequately addressed. For continued consultation and coordination with the issues concerning resources of the NPS, please contact Regional Environmental Coordinator Nick Chevance, Midwest Regional Office, National Park Service, Omaha, Nebraska

We appreciate the opportunity to provide these comments.

Sincerely,

*Michael T. Reynolds*

Michael T. Reynolds  
Regional Director



## A.2.4 Fairchild AFB IICEP Responses (Continued)

F\_iicep\_B\_A-R3

Beddown MOB1 scoping comments  
4/4/2013  
Page 2 of 2

F\_iicep\_B\_A-R3



April 4, 2013

United States Air Force  
Attention: Jean Reynolds  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

RE: Scoping comments on beddown of the first Main Operating Base (MOB1) of the KC-46A tanker aircraft / Environmental Impact Statement (EIS)

Thank you for the opportunity to provide comments on the scope of environmental issues to be addressed in the EIS. The Spokane Regional Clean Air Agency (SRCAA) is the agency responsible for enforcing federal, state, and local air pollution regulations in Spokane County, WA. SRCAA's scoping comments on the proposal are relative to Fairchild AFB, which is located in Spokane County. The following is a list of concerns/issues that may warrant evaluation in the EIS for the proposal.

### 1. Emissions from construction activities.

The construction activities required for the proposal (i.e., construction of new hangers, buildings, and parking areas) can be sources of air emissions, and should be considered in the EIS. These construction activities may include, but are not limited to, the following:

- Dust emissions from demolition, construction and excavation projects
- Deposition of dirt and mud from unpaved surfaces onto paved surfaces
- Disposal of debris generated as a result of the project
- Vehicle traffic on unpaved surfaces
- Operation of diesel powered construction equipment (note that diesel exhaust is a suspected carcinogen)
- Potential asbestos release during any demolition or renovation projects

### 2. Emissions from new equipment at Fairchild AFB

Construction/installation of any new stationary emission sources at Fairchild AFB should be considered in the EIS. For this project, potential stationary emission sources may include, but are not limited to, the following:

- Installation/operation of new emergency generators
- Installation/operation new fuel fired heating equipment
- Installation of additional fuel storage and loading/unloading capacity and resulting increases in emissions

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recycling symbol: ♻️ contains 100% post-consumer waste

### 3. Compliance with General Conformity Regulations and Washington State Implementation Plan

Portions of Spokane County are currently designated as maintenance areas for PM10 and Carbon Monoxide (CO) and operate under Maintenance Plans which are approved under the Washington State Implementation Plan (SIP). As a result, the EIS should include a conformity evaluation to determine whether the proposal will comply with the General Conformity Regulations given in 40 CFR Part 93.

SRCAA appreciates the opportunity to provide scoping comments on the EIS for the proposal. If SRCAA can provide additional input or information that would be useful in review of the proposal, please contact me at [REDACTED]

Sincerely,

SPOKANE REGIONAL CLEAN AIR AGENCY

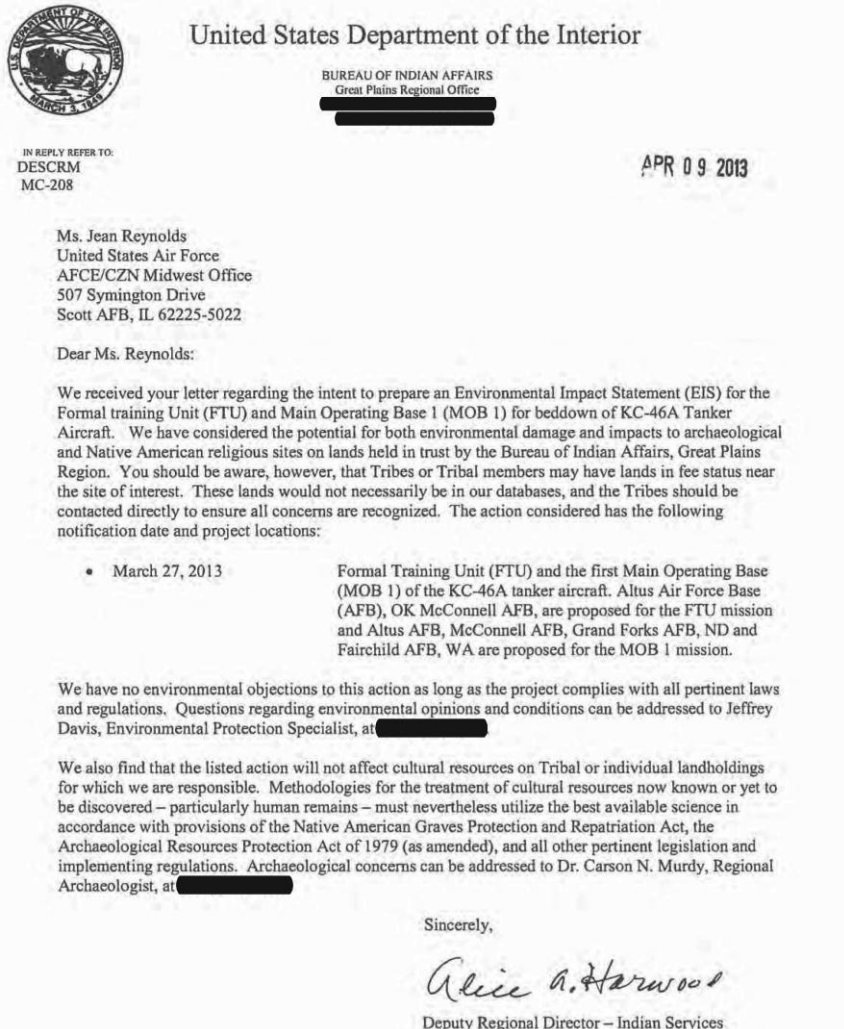
*Joe R. Southwell*  
Joe Southwell, P.E.  
Environmental Engineer

Cc: FAJB correspondence file

## A.2.5 Grand Forks AFB IICEP Responses

G\_iicep\_B\_A-R2

G\_iicep\_B\_A-R1



-----Original Message-----

From: prvs=180093fa90=jean.reynolds@us.af.mil [mailto:prvs=180093fa90=jean.reynolds@us.af.mil] On Behalf Of REYNOLDS, JEAN A CIV USAF DoD A7/AFCEC/CZN MidWest Office  
Sent: Friday, April 05, 2013 11:25 AM  
To: Allen, Dana  
Cc: Daues, Tom V.; CLARK, JOHN D GS-14 USAF DoD AFCEC/CZN  
Subject: RE: KC-46A FTU and MOB 1 EIS

Thank you for your comments.

JEAN A. REYNOLDS  
AFCEC/CZN  
Commercial: 618/229-0843  
DSN: 779-0843

-----Original Message-----

From: Allen, Dana [REDACTED]  
Sent: Thursday, April 04, 2013 1:40 PM  
To: REYNOLDS, JEAN A CIV USAF DoD A7/AFCEC/CZN MidWest Office  
Subject: KC-46A FTU and MOB 1 EIS

Thank you for inviting EPA, Region 8 in Denver to provide scoping comments on the future EIS for the KC-46A FTU and MOB 1 missions.

The Grand Forks facility would be in our EPA region.

Unfortunately at this time we do not have the staff resources to provide formal scoping comments. Expected environmental concerns for this type of facility in the Grand Forks area include:

- Protection of wetlands from the impacts from construction of facilities and changes in hydrology which could affect nearby wetlands.
- Protection of water resources from runoff during construction and operations (sediment, fuel and other chemicals)
- Protecting ground and surface waters from spills of fuel and other chemicals.
- Avoiding activities that significantly increase the quantity or timing of peak runoff to tributaries of the Red River of the North during flood conditions such as installing underdrains, and straightening stream channels. Depending on the extent of changes to the base, this project may provide a good opportunity to incorporate additional stormwater retention structures and practices.

-----  
Dana Allen

EPA Region 8 (EPR-N)

## A.2.5 Grand Forks AFB IICEP Responses (Continued)

G\_iicep\_B\_A-R3

REPLY TO  
ATTENTION OF

CENWO-OD-RND

DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS, OMAHA DISTRICT  
NORTH DAKOTA REGULATORY OFFICE

G\_iicep\_B\_A-R3

2 April 2013

MEMORANDUM FOR Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office,  
507 Symington Drive, Scott AFB, IL 62225-5022

SUBJECT: Environmental Impact Statement KC-46A Beddown

1. This is in response to your letter dated 27 March 2013, requesting US Army Corps of Engineers (Corps) comments regarding an Environmental Impact Statement associated with the possible beddown of the first Main Operating Base of the KC-46A tanker aircraft located at Grand Forks AFB, North Dakota.

2. Please be advised, Corps regulatory offices administer Section 10 of the Rivers and Harbors Act (Section 10) and Section 404 of the Clean Water Act (Section 404). Section 10 regulates work impacting navigable waters. Section 10 waters in North Dakota are the Missouri River (including Lake Sakakawea and Lake Oahe), Yellowstone River, James River south of the railroad track in Jamestown, North Dakota, Bois de Sioux River, Red River of the North, and the Upper Des Lacs Lake. Work over, in, or under navigable waters is considered to have an impact. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material (temporarily or permanently) in waters of the United States. Waters of the United States may include, but are not limited to, rivers, streams, ditches, coulees, lakes, ponds, and their adjacent wetlands. Fill material includes, but is not limited to, rock, sand, soil, clay, plastics, construction debris, wood chips, overburden from mines or other excavation activities and materials used to create any structure or infrastructure in waters of the United States.

3. Do not hesitate to contact this office by letter or telephone [REDACTED] if we can be of further assistance.

AUTHORITY LINE:

Encl

Daniel E. Cimarosti  
State Program Manager  
North Dakota Regulatory Office

Printed on Recycled Paper

U.S. ARMY CORPS OF ENGINEERS APPLICATION FOR DEPARTMENT OF THE ARMY PERMIT 33 CFR 325. The proponent agency is CECW-CO-R.		OMB APPROVAL NO. 0710-0003 EXPIRES: 28 FEBRUARY 2013	
Public reporting for this collection of information is estimated to average 11 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of the collection of information, including suggestions for reducing this burden, to Department of Defense, Washington Headquarters, Executive Services and Communications Directorate, Information Management Division and to the Office of Management and Budget, Paperwork Reduction Project (0710-0003). Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to any penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number. Please DO NOT RETURN your form to either of those addresses. Completed applications must be submitted to the District Engineer having jurisdiction over the location of the proposed activity.			
PRIVACY ACT STATEMENT Authorities: Rivers and Harbors Act, Section 10, 33 USC 403; Clean Water Act, Section 404, 33 USC 1344; Marine Protection, Research, and Sanctuaries Act, Section 103, 33 USC 1413; Regulatory Programs of the Corps of Engineers; Final Rule 33 CFR 320-332. Principal Purpose: Information provided on this form will be used in evaluating the application for a permit. Routine Uses: This information may be shared with the Department of Justice and other federal, state, and local government agencies, and the public and may be made available as part of a public notice as required by Federal law. Submission of requested information is voluntary, however, if information is not provided the permit application cannot be evaluated nor can a permit be issued. One set of original drawings or good reproducible copies which show the location and character of the proposed activity must be attached to this application (see sample drawings and/or instructions) and be submitted to the District Engineer having jurisdiction over the location of the proposed activity. An application that is not completed in full will be returned.			
(ITEMS 1 THRU 4 TO BE FILLED BY THE CORPS)			
1. APPLICATION NO.	2. FIELD OFFICE CODE	3. DATE RECEIVED	4. DATE APPLICATION COMPLETE
(ITEMS BELOW TO BE FILLED BY APPLICANT)			
5. APPLICANT'S NAME First - Middle - Last - Company - E-mail Address -		8. AUTHORIZED AGENT'S NAME AND TITLE (agent is not required) First - Middle - Last - Company - E-mail Address -	
6. APPLICANT'S ADDRESS: Address - City - State - Zip - Country -		9. AGENT'S ADDRESS: Address - City - State - Zip - Country -	
7. APPLICANT'S PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax		10. AGENTS PHONE NOS. w/AREA CODE a. Residence b. Business c. Fax	
STATEMENT OF AUTHORIZATION			
11. I hereby authorize, _____ to act in my behalf as my agent in the processing of this application and to furnish, upon request, supplemental information in support of this permit application.  SIGNATURE OF APPLICANT _____ DATE _____			
NAME, LOCATION, AND DESCRIPTION OF PROJECT OR ACTIVITY			
12. PROJECT NAME OR TITLE (see instructions)			
13. NAME OF WATERBODY, IF KNOWN (if applicable)		14. PROJECT STREET ADDRESS (if applicable) Address _____	
15. LOCATION OF PROJECT Latitude: +N Longitude: +W		City - State - Zip -	
16. OTHER LOCATION DESCRIPTIONS, IF KNOWN (see instructions) State Tax Parcel ID _____ Municipality _____ Section - Township - Range -			

ENG FORM 4345, OCT 2012

PREVIOUS EDITIONS ARE OBSOLETE.

Page 1 of 3

## A.2.5 Grand Forks AFB IICEP Responses (Continued)

G\_iicep\_B\_A-R3

17. DIRECTIONS TO THE SITE		
18. Nature of Activity (Description of project, include all features)		
19. Project Purpose (Describe the reason or purpose of the project, see instructions)		
USE BLOCKS 20-23 IF DREDGED AND/OR FILL MATERIAL IS TO BE DISCHARGED		
20. Reason(s) for Discharge		
21. Type(s) of Material Being Discharged and the Amount of Each Type in Cubic Yards:		
Type Amount in Cubic Yards	Type Amount in Cubic Yards	Type Amount in Cubic Yards
22. Surface Area in Acres of Wetlands or Other Waters Filled (see instructions)		
Acres or Linear Feet		
23. Description of Avoidance, Minimization, and Compensation (see instructions)		

ENG FORM 4345, OCT 2012

Page 2 of 3

G\_iicep\_B\_A-R3

24. Is Any Portion of the Work Already Complete? <input type="checkbox"/> Yes <input type="checkbox"/> No IF YES, DESCRIBE THE COMPLETED WORK					
25. Addresses of Adjoining Property Owners, Lessees, Etc., Whose Property Adjoins the Waterbody (if more than can be entered here, please attach a supplemental list).					
a. Address-					
City -	State -	Zip -			
b. Address-					
City -	State -	Zip -			
c. Address-					
City -	State -	Zip -			
d. Address-					
City -	State -	Zip -			
e. Address-					
City -	State -	Zip -			
26. List of Other Certificates or Approvals/Denials received from other Federal, State, or Local Agencies for Work Described in This Application.					
AGENCY	TYPE APPROVAL*	IDENTIFICATION NUMBER	DATE APPLIED	DATE APPROVED	DATE DENIED
* Would include but is not restricted to zoning, building, and flood plain permits					
27. Application is hereby made for permit or permits to authorize the work described in this application. I certify that this information in this application is complete and accurate. I further certify that I possess the authority to undertake the work described herein or am acting as the duly authorized agent of the applicant.					
SIGNATURE OF APPLICANT		DATE	SIGNATURE OF AGENT		DATE
The Application must be signed by the person who desires to undertake the proposed activity (applicant) or it may be signed by a duly authorized agent if the statement in block 11 has been filled out and signed.					
18 U.S.C. Section 1001 provides that: Whoever, in any manner within the jurisdiction of any department or agency of the United States knowingly and willfully falsifies, conceals, or covers up any trick, scheme, or disguises a material fact or makes any false, fictitious or fraudulent statements or representations or makes or uses any false writing or document knowing same to contain any false, fictitious or fraudulent statements or entry, shall be fined not more than \$10,000 or imprisoned not more than five years or both.					

ENG FORM 4345, OCT 2012

Page 3 of 3

## A.2.5 Grand Forks AFB HCEP Responses (Continued)

G\_iicep\_B\_A-R3

### Instructions for Preparing a Department of the Army Permit Application

**Blocks 1 through 4.** To be completed by Corps of Engineers.

**Block 5. Applicant's Name.** Enter the name and the E-mail address of the responsible party or parties. If the responsible party is an agency, company, corporation, or other organization, indicate the name of the organization and responsible officer and title. If more than one party is associated with the application, please attach a sheet with the necessary information marked Block 5.

**Block 6. Address of Applicant.** Please provide the full address of the party or parties responsible for the application. If more space is needed, attach an extra sheet of paper marked Block 6.

**Block 7. Applicant Telephone Number(s).** Please provide the number where you can usually be reached during normal business hours.

**Blocks 8 through 11.** To be completed, if you choose to have an agent.

**Block 8. Authorized Agent's Name and Title.** Indicate name of individual or agency, designated by you, to represent you in this process. An agent can be an attorney, builder, contractor, engineer, or any other person or organization. Note: An agent is not required.

**Blocks 9 and 10. Agent's Address and Telephone Number.** Please provide the complete mailing address of the agent, along with the telephone number where he / she can be reached during normal business hours.

**Block 11. Statement of Authorization.** To be completed by applicant, if an agent is to be employed.

**Block 12. Proposed Project Name or Title.** Please provide name identifying the proposed project, e.g., Landmark Plaza, Burned Hills Subdivision, or Edsall Commercial Center.

**Block 13. Name of Waterbody.** Please provide the name of any stream, lake, marsh, or other waterway to be directly impacted by the activity. If it is a minor (no name) stream, identify the waterbody the minor stream enters.

**Block 14. Proposed Project Street Address.** If the proposed project is located at a site having a street address (not a box number), please enter it here.

**Block 15. Location of Proposed Project.** Enter the latitude and longitude of where the proposed project is located. If more space is required, please attach a sheet with the necessary information marked Block 15.

**Block 16. Other Location Descriptions.** If available, provide the Tax Parcel Identification number of the site, Section, Township, and Range of the site (if known), and / or local Municipality that the site is located in.

**Block 17. Directions to the Site.** Provide directions to the site from a known location or landmark. Include highway and street numbers as well as names. Also provide distances from known locations and any other information that would assist in locating the site. You may also provide description of the proposed project location, such as lot numbers, tract numbers, or you may choose to locate the proposed project site from a known point (such as the right descending bank of Smith Creek, one mile downstream from the Highway 14 bridge). If a large river or stream, include the river mile of the proposed project site if known.

**Block 18. Nature of Activity.** Describe the overall activity or project. Give appropriate dimensions of structures such as wing walls, dikes (identify the materials to be used in construction, as well as the methods by which the work is to be done), or excavations (length, width, and height). Indicate whether discharge of dredged or fill material is involved. Also, identify any structure to be constructed on a fill, piles, or float-supported platforms.

The written descriptions and illustrations are an important part of the application. Please describe, in detail, what you wish to do. If more space is needed, attach an extra sheet of paper marked Block 18.

**Block 19. Proposed Project Purpose.** Describe the purpose and need for the proposed project. What will it be used for and why? Also include a brief description of any related activities to be developed as the result of the proposed project. Give the approximate dates you plan to both begin and complete all work.

G\_iicep\_B\_A-R3

**Block 20. Reasons for Discharge.** If the activity involves the discharge of dredged and/or fill material into a wetland or other waterbody, including the temporary placement of material, explain the specific purpose of the placement of the material (such as erosion control).

**Block 21. Types of Material Being Discharged and the Amount of Each Type in Cubic Yards.** Describe the material to be discharged and amount of each material to be discharged within Corps jurisdiction. Please be sure this description will agree with your illustrations. Discharge material includes: rock, sand, clay, concrete, etc.

**Block 22. Surface Areas of Wetlands or Other Waters Filled.** Describe the area to be filled at each location. Specifically identify the surface areas, or part thereof, to be filled. Also include the means by which the discharge is to be done (backhoe, dragline, etc.). If dredged material is to be discharged on an upland site, identify the site and the steps to be taken (if necessary) to prevent runoff from the dredged material back into a waterbody. If more space is needed, attach an extra sheet of paper marked Block 22.

**Block 23. Description of Avoidance, Minimization, and Compensation.** Provide a brief explanation describing how impacts to waters of the United States are being avoided and minimized on the project site. Also provide a brief description of how impacts to waters of the United States will be compensated for, or a brief statement explaining why compensatory mitigation should not be required for those impacts.

**Block 24. Is Any Portion of the Work Already Complete?** Provide any background on any part of the proposed project already completed. Describe the area already developed, structures completed, any dredged or fill material already discharged, the type of material, volume in cubic yards, acres filled, if a wetland or other waterbody (in acres or square feet). If the work was done under an existing Corps permit, identify the authorization, if possible.

**Block 25. Names and Addresses of Adjoining Property Owners, Lessees, etc., Whose Property Adjoins the Project Site.** List complete names and full mailing addresses of the adjacent property owners (public and private) lessees, etc., whose property adjoins the waterbody or aquatic site where the work is being proposed so that they may be notified of the proposed activity (usually by public notice). If more space is needed, attach an extra sheet of paper marked Block 24.

Information regarding adjacent landowners is usually available through the office of the tax assessor in the county or counties where the project is to be developed.

**Block 26. Information about Approvals or Denials by Other Agencies.** You may need the approval of other federal, state, or local agencies for your project. Identify any applications you have submitted and the status, if any (approved or denied) of each application. You need not have obtained all other permits before applying for a Corps permit.

**Block 27. Signature of Applicant or Agent.** The application must be signed by the owner or other authorized party (agent). This signature shall be an affirmation that the party applying for the permit possesses the requisite property rights to undertake the activity applied for (including compliance with special conditions, mitigation, etc.).

### DRAWINGS AND ILLUSTRATIONS

#### General Information.

Three types of illustrations are needed to properly depict the work to be undertaken. These illustrations or drawings are identified as a Vicinity Map, a Plan View or a Typical Cross-Section Map. Identify each illustration with a figure or attachment number.

Please submit one original, or good quality copy, of all drawings on 8½ x11 inch plain white paper (electronic media may be substituted). Use the fewest number of sheets necessary for your drawings or illustrations.

Each illustration should identify the project, the applicant, and the type of illustration (vicinity map, plan view, or cross-section). While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.

## A.2.5 Grand Forks AFB IICEP Responses (Continued)

G\_iicep\_B\_A-R3

### Vicinity Map

The vicinity map you provide will be printed in any public notice that is issued and used by the Corps of Engineers and other reviewing agencies to locate the site of the proposed activity. You may use an existing road map or US Geological Survey topographic (scale 1:24,000) as the vicinity map. Please include sufficient details to simplify locating the site from both the waterbody and from land. Identify the source of the map or chart from which the vicinity map was taken and, if not already shown, add the following:

- location of activity site (draw an arrow showing the exact location of the site on the map).
- latitude, longitude, river mile, if known, and/or other information that coincides with Block 6 on the application form.
- name of waterbody and the name of the larger creek, river, by, etc., that the waterbody is immediately tributary to.
- names, descriptions and location of landmarks.
- name of all applicable political (county, parish, borough, town, city, etc.) jurisdictions
- name of and distance to nearest town, community, or other identifying locations
- names or numbers of all roads in the vicinity of the site.
- north arrow.
- scale.

### Plan View

The plan view shows the proposed activity as if you were looking straight down on it from above. your plan view should clearly show the following:

- Name of waterbody (river, creek, lake, wetland, etc.) and river mile (if known) at location of activity.
- Existing shorelines.
- Mean high and mean low water lines and maximum (spring) high tide line in tidal areas.
- Ordinary high water line and ordinary low water line if the proposed activity is located on a non-tidal waterbody.
- Average water depths around the activity.
- Dimensions of the activity and distance it extends from the high water line into the water.
- Distances to nearby Federal projects, if applicable.
- Distance between proposed activity and navigation channel, where applicable.
- Location of structures, if any, in navigable waters immediately adjacent to the proposed activity.
- Location of any wetlands (marshes, swamps, tidal flats, etc.)
- North arrow.
- Scale.
- If dredged material is involved, you must describe the type of material, number of cubic yards, method of handling, and the location of fill and spoil disposal area. The drawing should show proposed retention levees, weirs, and/or other means for retaining hydraulically placed materials.
- Mark the drawing to indicate previously completed portions of the activity.

### Cross Section View and/or Elevation

The elevation and/or cross section view is a scale drawing that shows the side, front, or rear of the proposed activity. If a section view is shown, it represents the proposed structure as it would appear if cut internally for display. Your elevation should clearly show the following:

- Water elevations as shown in the plan view.

G\_iicep\_B\_A-R3

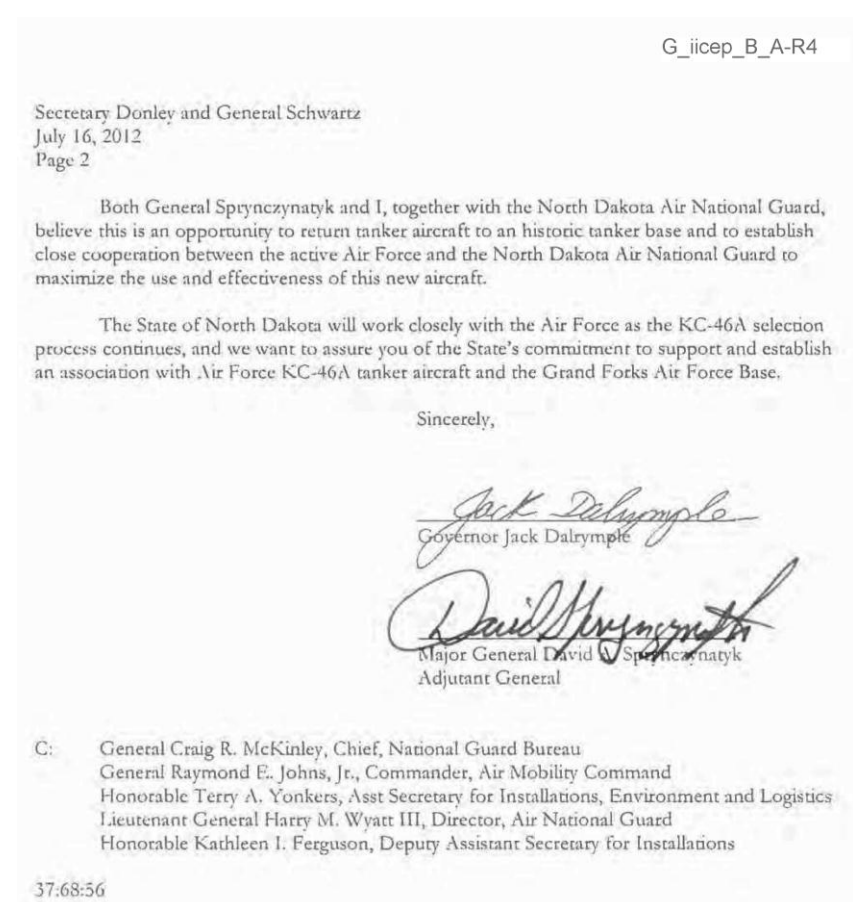
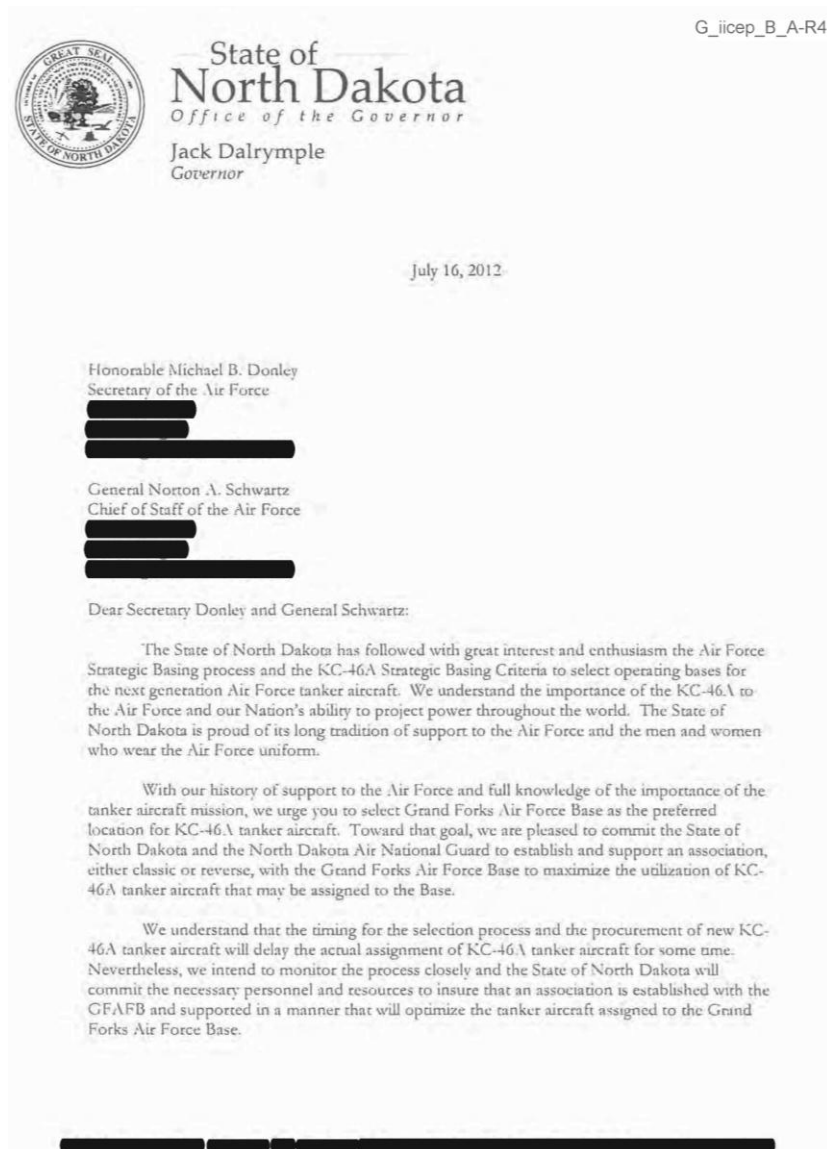
- Water depth at water-ward face of proposed activity or, if dredging is proposed, dredging and estimated disposal grades.
- Dimensions from mean high water line (in tidal waters) of proposed fill or float, or high tide line for pile supported platform. Describe any structures to be built on the platform.
- Cross section of excavation or fill, including approximate side slopes.
- Graphic or numerical scale.
- Principal dimensions of the activity

### Notes on Drawings\*

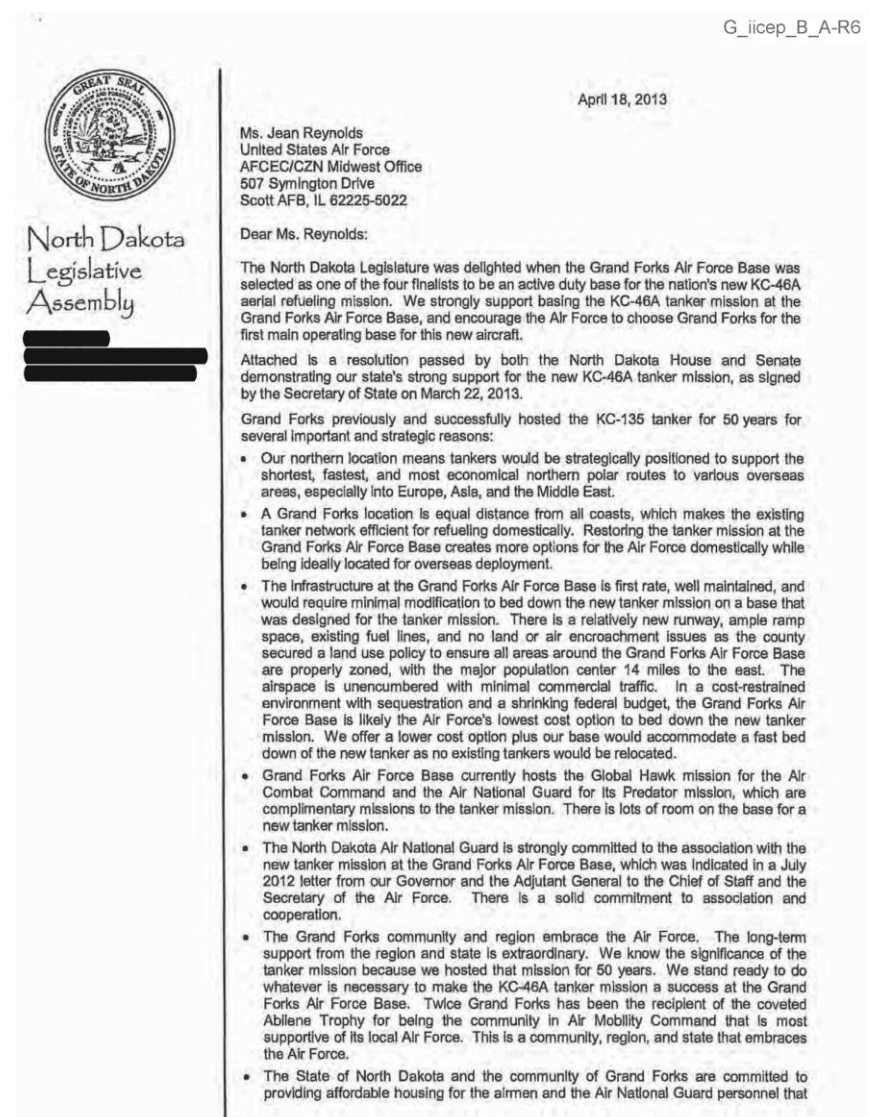
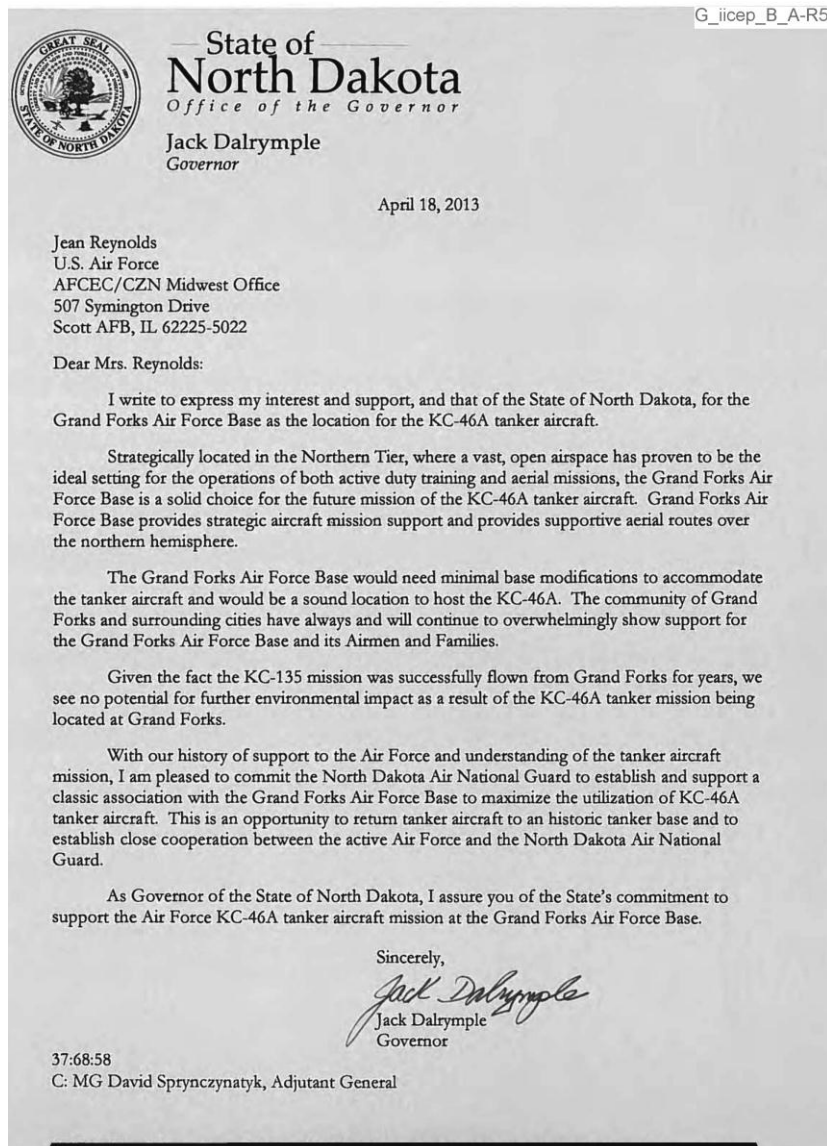
- Names of adjacent property owners who may be affected. Complete names and addresses should be shown in Block 5 on ENG Form 4345.
- Legal property description: Number, name of subdivision, block, and lot number. Section, Township, and Range (if applicable) from plot, deed, or tax assessment.
- Photographs of the site of the proposed activity are not required; however, pictures are helpful and may be submitted as part of any application.
- **While illustrations need not be professional (many small, private project illustrations are prepared by hand), they should be clear, accurate, and contain all necessary information.**

\* Drawings should be as clear and simple as possible (ie, not too "busy").

## A.2.5 Grand Forks AFB IICEP Responses (Continued)



## A.2.5 Grand Forks AFB IICEP Responses (Continued)



## A.2.5 Grand Forks AFB IICEP Responses (Continued)

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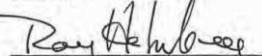
2


come with the KC-46A mission. The airmen will be well integrated into our cities and small towns in the region.

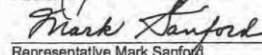
- The North Dakota Legislature appropriated \$8 million for base enhancement activities in the 2009 and 2011 legislative sessions to enhance the Grand Forks Air Force Base. Those funds supported 12 projects to enhance training, projects, equipment, and supports the establishment of an enhanced use lease on the base to provide ongoing local income for the Air Force Base. In this biennial session, the legislature has \$1.5 million in its budget for base enhancement, and another \$7.5 million to support the enhanced use lease, assuming those negotiations will be successful. Our budget support for the Grand Forks Air Force Base has passed both houses indicative of our support. Other issues in that budget bill will be resolved by both houses and finally approved within the next two weeks. You can count on that.

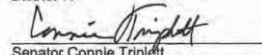
Our Congressional Delegation and the Governor join us in support of bringing the KC-46A mission to the Grand Forks Air Force Base. We are a united front, all in support of this new Air Force mission. Grand Forks and North Dakota offer many advantages as the location for your first KC-46A main operating base. Thank you for your service to our nation, and for your favorable consideration of our great state.

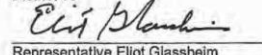
Sincerely,

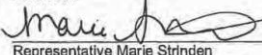
  
Senator Ray Holmberg  
District 17

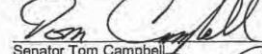
  
Representative Mark S. Owens  
District 17


  
Representative Mark Sanford  
District 17

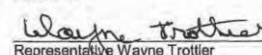
  
Senator Connie Triplett  
District 18

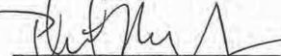
  
Representative Elliot Glassheim  
District 18

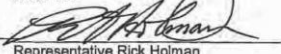
  
Representative Marie Strinden  
District 43

  
Senator Tom Campbell  
District 19

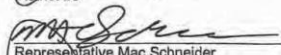
  
Representative Gary Fair  
District 19

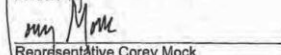
  
Representative Wayne Trotter  
District 19


  
Senator Phillip M. Murphy  
District 20

  
Representative Rick Holman  
District 20

  
Representative Gail Mooney  
District 20

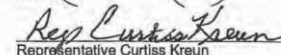
  
Representative Mac Schneider  
District 42

  
Representative Corey Mock  
District 42

  
Representative Kylie Oversen  
District 42

  
Senator Lonnie J. Laffen  
District 43

  
Representative Lois Delmore  
District 43

  
Representative Curtiss Kreun  
District 43

G\_iicep\_B\_A-R6

### Sixty-third Legislative Assembly of North Dakota In Regular Session Commencing Tuesday, January 8, 2013

HOUSE CONCURRENT RESOLUTION NO. 3012  
(Representatives Strinden, Owens, Sanford, Delmore, Glassheim, Holman, Mock, Mooney, Oversen)  
(Senators Murphy, Schneider, Triplett)

A concurrent resolution urging the United States Air Force to select the Grand Forks Air Force Base as the active duty main operating base for the new KC-46A refueling tanker mission.

WHEREAS, the Grand Forks Air Force Base is one of four finalists to serve as the active duty main operating base for the United States Air Force's new KC-46A tanker mission; and

WHEREAS, the Grand Forks Air Force Base successfully hosted a KC-135 tanker mission for over fifty years, from 1960 to 2010; and

WHEREAS, existing infrastructure and recent expansions in housing capacity would lend to successfully hosting the KC-46A tanker mission; and

WHEREAS, the Grand Forks Air Force Base has an exemplary record of service; and

WHEREAS, the vast, open airspace of the Northern Plains has proven to be an ideal setting for the operation of both training and active duty aerial missions; and

WHEREAS, the Grand Forks Air Force Base was selected to house and support unmanned aircraft missions being launched around the globe; and

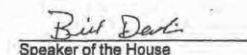
WHEREAS, the geographic location of the Grand Forks Air Force Base provides access to strategic aerial routes over the North Pole; and

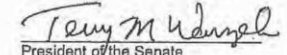
WHEREAS, the Grand Forks community showed its overwhelming support for the Grand Forks Air Force Base during base realignment and closure in 2005;

NOW, THEREFORE, BE IT RESOLVED BY THE HOUSE OF REPRESENTATIVES OF NORTH DAKOTA, THE SENATE CONCURRING THEREIN:

That the Sixty-third Legislative Assembly urges the United States Air Force to select the Grand Forks Air Force Base as the active duty main operating base for the new KC-46A refueling tanker mission; and

BE IT FURTHER RESOLVED, that the Secretary of State forward copies of this resolution to the Secretary of Defense, the Commander of the Grand Forks Air Force Base, the General Air Force Chief of Staff, and to each member of the North Dakota Congressional Delegation.

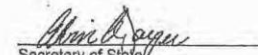
  
Speaker of the House

  
President of the Senate

  
Chief Clerk of the House

  
Secretary of the Senate

Filed in this office this 2nd day of March, 2013,  
at 10:36 o'clock A. M.

  
Secretary of State

G\_iicep\_B\_A-R7




Environmental Health

## A.2.5 Grand Forks AFB IICEP Responses (Continued)

G\_iicep\_B\_A-R8

G\_iicep\_B\_A-R7




**NORTH DAKOTA**  
DEPARTMENT of HEALTH

ENVIRONMENTAL HEALTH SECTION

[REDACTED]

[REDACTED]

[REDACTED]



---

Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

**Soils**

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

**Surface Waters**

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

**Fill Material**

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED]



## North Dakota Department of Transportation

Grant Levi, P.E.  
Interim Director

Jack Dalrymple  
Governor

[REDACTED]

[REDACTED]

## A.2.5 Grand Forks AFB IICEP Responses (Continued)

G\_iicep\_B\_A-R10



April 17, 2013

J.Dale Clark  
Department of the Air Force  
Air Force NEPA Center  
[Redacted]

"Letter of Clearance" In Conformance with the North Dakota Federal Program Review System -  
State Application Identifier No.: ND130417-0113

Dear Mr. Clark:

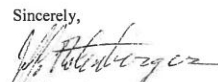
SUBJECT: EIS for Beddown of FTU for KC-46A Tanker Aircraft in Grand Forks AFB, ND

The above referenced notice has been reviewed through the North Dakota Federal Program Review Process. As a result of the review, clearance is given to the project only with respect to this consultation process.

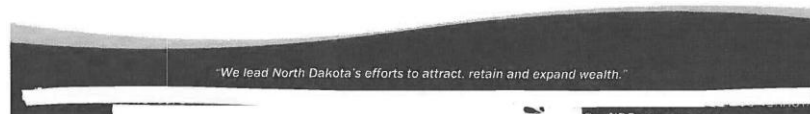
If the proposed project changes in duration, scope, description, budget, location or area of impact, from the project description submitted for review, then it is necessary to submit a copy of the completed application to this office for further review.

We also request the opportunity for complete review of applications for renewal or continuation grants within one year after the date of this letter.

Please use the above SAI number for reference to the above project with this office. Your continued cooperation in the review process is much appreciated.

Sincerely,  
  
Jeff Rotenberger  
Energy Program Manager  
Division of Community Services

jml



### OFFICE OF THE ADJUTANT GENERAL

North Dakota National Guard  
Department of Emergency Services

April 18, 2013

Jean Reynolds  
U.S. Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Mrs. Reynolds:

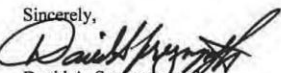
I am pleased to commit the North Dakota Air National Guard to a classic association, with the 319<sup>th</sup> Air Base Wing to maximize utilization of the KC-46A tanker aircraft in consideration for assignment at Grand Forks Air Force Base.

The North Dakota Air National Guard is home to the 119<sup>th</sup> Wing which has an unequalled history of excellence in both manned and unmanned aircraft. The 119<sup>th</sup> has flown in excess of 173,000 Class-A Mishap Free hours since 1973 – mostly in fighter aircraft. The 119<sup>th</sup> Wing just received their 15<sup>th</sup> Air Force Outstanding Unit Award (AFOUA) and previously was awarded the 2009 Joint Operational Support Airlift (JOSA) Squadron of the Year award. Currently the North Dakota Air National Guard maintains an association with the Minot Air Force Base providing nuclear missile security and earning the distinction of 2010 Air National Guard Security Forces Squadron of the Year. This distinction is held in high esteem as the North Dakota Air National Guard's 219<sup>th</sup> Security Forces Squadron is the first and only Air National Guard unit nationwide to have been validated to perform this critical mission.

Since the North Dakota Air National Guard currently maintains and operates the MQ-1 unmanned aircraft at Grand Forks Air Force Base, the expansion of our association into the KC-46A tanker mission would be seamless. The 119<sup>th</sup> already has Air Mobility Command pilots and maintenance personnel, a strong recruiting base in the Grand Forks area and stands ready to maintain and fly the KC-46A.

I also firmly believe that the potential for environmental impacts in the vicinity of the Grand Forks Air Force Base is insignificant. Given the fact the KC-135 mission was successfully flown from Grand Forks for years, I see no further environmental impact as a result of the KC-46A tanker mission being located at Grand Forks.

As Adjutant General of the North Dakota National Guard, I assure you of our commitment to support an association with the Air Force KC-46A tanker aircraft and the Grand Forks Air Force Base.

Sincerely,  
  
David A. Sprynczyk  
Major General, North Dakota National Guard  
The Adjutant General

## A.2.6 McConnell AFB ICEP Responses

M\_iicep\_B\_A-R2

M\_iicep\_B\_A-R1



## United States Department of the Interior

BUREAU OF INDIAN AFFAIRS  
Great Plains Regional OfficeIN REPLY REFER TO:  
DESCRM  
MC-208

APR 09 2013

Ms. Jean Reynolds  
United States Air Force  
AFCE/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds:

We received your letter regarding the intent to prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for beddown of KC-46A Tanker Aircraft. We have considered the potential for both environmental damage and impacts to archaeological and Native American religious sites on lands held in trust by the Bureau of Indian Affairs, Great Plains Region. You should be aware, however, that Tribes or Tribal members may have lands in fee status near the site of interest. These lands would not necessarily be in our databases, and the Tribes should be contacted directly to ensure all concerns are recognized. The action considered has the following notification date and project locations:

- March 27, 2013 Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Altus Air Force Base (AFB), OK McConnell AFB, are proposed for the FTU mission and Altus AFB, McConnell AFB, Grand Forks AFB, ND and Fairchild AFB, WA are proposed for the MOB 1 mission.

We have no environmental objections to this action as long as the project complies with all pertinent laws and regulations. Questions regarding environmental opinions and conditions can be addressed to Jeffrey Davis, Environmental Protection Specialist, at [REDACTED]

We also find that the listed action will not affect cultural resources on Tribal or individual landholdings for which we are responsible. Methodologies for the treatment of cultural resources now known or yet to be discovered – particularly human remains – must nevertheless utilize the best available science in accordance with provisions of the Native American Graves Protection and Repatriation Act, the Archaeological Resources Protection Act of 1979 (as amended), and all other pertinent legislation and implementing regulations. Archaeological concerns can be addressed to Dr. Carson N. Murdy, Regional Archaeologist, at [REDACTED]

Sincerely,

Deputy Regional Director – Indian Services

U.S. Department of Transportation  
Federal Aviation Administration

APR 19 2013

Ms. Jean Reynolds  
United States Air Force  
AFCE/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds.

The Federal Aviation Administration received a request for participation and solicitation for scoping comments for the planned Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit and first Main Operating Base for the KC-46A tanker aircraft.

The Air Traffic Organization (ATO) has reviewed the information provided with the request and solicitation and has determined that there appears to be no proposed change or impact to the National Airspace System (NAS) as result of the proposed actions. As such, the ATO has no comments at this time. We have provided copies of the request and solicitation to our appropriate service centers for their information and review. If they have any additional comments they will provide them through the EIS website as described in the request and solicitation.

If you later determine that the proposed actions being assessed in the EIS involve potential changes in the NAS, you will need to refer to the requirements of FAA Order JO 7400.2, Procedures for Handling Airspace Matters (<http://www.faa.gov/documentLibrary/media/Order/AIR.pdf>). These actions would include the establishment of new Special Use Airspace (SUA) or expansion of existing SUA. Chapter 32 and Appendices 1 through 4 of Order JO 7400.2 will provide you the ATO environmental processes related to SUA actions. These sections of the order provide specific guidance on how to work with the ATO to facilitate the National Environmental Policy Act (NEPA) process in relation to airspace actions. If you have any additional questions regarding ATO's environmental process please contact William Burris at [REDACTED]

Sincerely,

Dennis Roberts  
Director of Aerospace ServicesEnclosure  
Transmitted Correspondence

## A.2.6 McConnell AFB IICEP Responses (Continued)

M\_iicep\_B\_A-R3

M\_iicep\_B\_A-R3



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION 7

APR 22 2013

Mr. J. Dale Clark  
Air Force NEPA Center  
ATTN: AFCEC/CZN  
2261 Hughes Ave., Suite 155  
Lackland AFB, TX 78235-9853

Dear Mr. Clark:

This letter responds to your March 27, 2013, consultation request regarding the EIS to assess the potential environmental consequences associated with the bed-down of the Formal Training Unit and the first Main Operating Base of the KC-46A tanker aircraft at McConnell AFB, KS.

While evaluating this action, I referred to EPA's NEPAAssist database for spatial relationships of environmentally regulated facilities and remediation sites. I have provided a map with locations of these facilities and other areas you might consider.

Ruby Crysler, the RCRA corrective project manager of the site, provided me with these comments that the Air Force should consider when preparing the EIS:

- Detail the additional infrastructure that will be needed to support the numbers of increased airmen or facilities (larger refueling tanks, additional stormwater or sewage capacity, etc.).
- The base is currently addressing numerous solid waste management units and installation program sites through a RCRA corrective action permit. Thus far they have addressed 19 SWMUs/IRP sites out of 230 total sites on the permit.
- The base has implemented an institutional controls plan that currently covers 21 sites. Any infrastructure expansion on the base needs to be coordinated closely with the base's 22 Civil Engineer Squadron/CEAN (Asset Management Environmental Element). They oversee implementation of the institutional controls plan and work closely with the EPA and the Kansas Department of Health and Environment to investigate and remediate soil and groundwater contamination present at many different locations on the base. We want to ensure that construction and operations do not disturb contaminant source areas, spread contamination, or expose personnel to environmental hazards.

Thank you for providing the opportunity to provide early comments on this project. EPA looks forward to the draft environmental document. I encourage you to contact me at [REDACTED] or [REDACTED] for any NEPA concerns, or Ms. Crysler at [REDACTED] or [REDACTED] for RCRA concerns.

Sincerely,

Joe Summerlin  
NEPA Reviewer



Printed on Recycled Paper

## A.2.6 McConnell AFB IICEP Responses (Continued)

M\_iicep\_B\_A-R4



U.S. Department  
of Transportation  
  
Federal Aviation  
Administration

Central Region  
Iowa, Kansas,  
Missouri, Nebraska

APR 25 2013

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

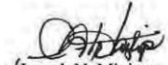
Dear Ms. Reynolds:

We have received the Department of the Air Force's correspondence dated March 27, 2013, regarding the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. We generally do not provide comments from an environmental standpoint.

The project may require formal notice and review for airspace review under Federal Aviation Regulation (FAR) Part 77, Objects Affecting Navigable Airspace. To determine if you need to file with FAA, go to <http://oeaaa.faa.gov> and click on the "Notice Criteria Tool" found at the left-hand side of the page.

If after using the tool you determine that filing with FAA is required, we recommend a 120-day notification to accommodate the review process and issue our determination letter. Proposals may be filed at <http://oeaaa.faa.gov>.

We hope this adequately addresses your concerns.

  
Joseph N. Miniace  
Regional Administrator

M\_iicep\_B\_A-R5

Division of Environment  
Curtis State Office Building  
1000 SW Jackson St., Suite 400  
Topeka, KS 66612-1367



Phone: 785.296.1535  
Fax: 785.296.8464  
[www.kdheks.gov](http://www.kdheks.gov)

Robert Moser, MD, Secretary

Department of Health & Environment

Sam Brownback, Governor

Comments by: KDHE

Transmittal Date: April 29, 2013

This form provides notification and the opportunity for your agency to review and comments on this proposed project as required by Executive Order 12372. Review Agency, please complete Parts II and III as appropriate and return to contact person listed below. Your prompt response will be appreciated.

RETURN TO: Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

### PART I

☐ Aging  
☐ Agriculture  
☐ Biological Survey  
☐ Conservation Commission  
☐ Corporation Commission

### REVIEW AGENCIES/COMMISSION

☐ Education  
☐ Geological Survey, KS  
☒ Health & Environment  
☐ Historical Society  
☐ Social & Rehabilitation

☐ State Forester  
☐ Transportation  
☐ Water Office, KS  
☐ Wildlife & Parks  
☐ Commerce

### PART II

### AGENCY REVIEW COMMENTS

COMMENTS: (Attach additional sheet if necessary) Re: EIS associated with the Beddown of the FTU and the first MOB of the KC-46A Tanker Aircraft at McConnell Air Force Base, Wichita, Kansas  
Please see the enclosed comments submitted by Scott Yankey and Travis Daneke, Bureau of Environmental Remediation.

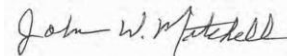
### PART III

### RECOMMENDED ACTION COMMENTS:

☒ Clearance of the project should be granted.  
☐ Clearance of the project should not be granted.  
☐ Clearance of the project should be delayed until the issues or questions above have been clarified.  
☐ Request a State Process Recommendation in concurrence with the above comments.

☐ Clearance of the project should not be delayed but the Applicant should (in the final application) address and clarify the question or concerns indicated above.  
☐ Request the opportunity to review final application prior to submission to the federal funding agency.

### DIVISIONS/ AGENCY/ COMMISSION



John W. Mitchell, Director  
Division of Environment


JWM/df

## A.2.6 McConnell AFB IICEP Responses (Continued)

M\_iicep\_B\_A-R5

Bureau of Environmental Remediation  
Curtis State Office Building  
1000 SW Jackson St., Suite 410  
Topeka, KS 66612-1367

Robert Moser, MD, Secretary



**Kansas**

Department of Health and Environment

phone: 785-296-8025  
fax: 785-296-4823  
ryankey@kdheks.gov  
www.kdheks.gov

Sam Brownback, Governor

**MEMORANDUM**

**TO:** Donna Fisher  
**FROM:** Scott Yankey  
**DATE:** April 22, 2013  
**RE:** Intergovernmental Agency Review requested by the U.S. Air Force for the Environmental Impact Statement Associated with the Beddown of the Formal Training Unit and/or the First Main Operating Base of the KC-46A Tanker Aircraft at McConnell Air Force Base, Wichita, Kansas

---

The Kansas Department of Health and Environment (KDHE), Bureau of Environmental Remediation (BER), Assessment and Restoration Section, Superfund and Drycleaner Remediation Unit has identified seven known contaminated drycleaner facilities located within two (2) miles of McConnell Air Force Base (Base) property. Contaminated groundwater from some of these sites could flow toward the Base and the proposed project.

The identified sites within two (2) miles of the Base include the following:


Site Name	Address	Site ID
Acme Cleaners	1516 S. Edgemoor, Wichita	C2-087-70268
Best Cleaners	1212 S. Rock Road, Wichita	C2-087-03011
Hillside Laundry	2890 S. Hillside, Wichita	C2-087-70838
Magic Carpet Cleaners	5602 E. Harry, Wichita	C2-087-71488
Misco Towel & Uniform	2774 S. Roosevelt, Wichita	C2-087-72804
Tommie's Cleaners	813 S. Woodlawn, Wichita	C2-087-70843
Welch Plaza Cleaners	3203 E. Harry, Wichita	C2-087-70272

Staff members from the U.S. Air Force are welcome to come and view the KDHE-BER files in accordance with the Kansas Open Records Act. Please contact me by telephone at (785) 296-8025 or by e-mail at [ryankey@kdheks.gov](mailto:ryankey@kdheks.gov) if you have any questions.

M\_iicep\_B\_A-R5

Bureau of Environmental Remediation  
Curtis State Office Building  
1000 SW Jackson St., Suite 410  
Topeka, KS 66612-1367

Robert Moser, MD, Secretary



**Kansas**

Department of Health & Environment

phone: 785-296-6378  
fax: 785-296-4823  
tdaneke@kdheks.gov  
www.kdheks.gov

Sam Brownback, Governor

**MEMORANDUM**

**TO:** Donna Fisher  
**CC:** McConnell AFB Parent Site (C2-087-03010)  
**FROM:** Travis Daneke  
**DATE:** April 5, 2013  
**RE:** Environmental Audit Requested by Dale Clark from the Department of the Air Force.

The Kansas Department of Health and Environment (KDHE), Bureau of Environmental Remediation (BER), Assessment and Restoration Section has located forty-three (43) known Department of Defense Sites site in the vicinity of the area in question.

- McConnell AFB Parent Site (C2-087-03010)
- Air Force Plant #13 (C2-087-71343)
- McConnell AFB SWMU 122 (C2-087-71347)
- McConnell AFB SWMU 145 (C2-087-71348)
- McConnell AFB SWMU 151 (C2-087-71349)
- McConnell AFB SWMU 202 (C2-087-71350)
- McConnell AFB SWMU 204 (C2-087-71351)
- McConnell AFB SWMU 140 (C2-087-71352)
- McConnell AFB SWMU 124 (C2-087-71353)
- McConnell AFB SWMU 150 (C2-087-71354)
- McConnell AFB SWMU 123 (C2-087-71355)
- McConnell AFB SWMU 142 (C2-087-71356)
- McConnell AFB SWMU 114 (C2-087-71357)
- McConnell AFB SWMU 198 (C2-087-71358)
- McConnell AFB SWMU 113 (C2-087-71359)
- McConnell AFB SWMU 121 (C2-087-71360)
- McConnell AFB SWMU 148 (C2-087-71361)
- McConnell AFB SWMU 125 (C2-087-71362)
- McConnell AFB SWMU 127 (C2-087-71363)
- McConnell AFB SWMU 126 (C2-087-71364)
- McConnell AFB SWMU 128 (C2-087-71365)
- McConnell AFB SWMU 137 (C2-087-71366)

## A.2.6 McConnell AFB IICEP Responses (Continued)

M\_iicep\_B\_A-R5

#7

M\_iicep\_B\_A-R6

- McConnell AFB SWMU 183 (C2-087-71367)
- McConnell AFB SWMU 186 (C2-087-71368)
- McConnell AFB SWMU 122 (C2-087-71347)
- McConnell AFB SWMU 184 (C2-087-71369)
- McConnell AFB SS-01 Spill Site (C2-087-71370)
- McConnell AFB SS-03 Spill Site (C2-087-71466)
- McConnell AFB FT-06 (C2-087-71467)
- McConnell AFB FT-07 (C2-087-71468)
- McConnell LF-11 Landfill 2 (C2-087-71469)
- McConnell SS-14 (C2-087-71888)
- McConnell AFB ST-17/SS-02 (C2-087-71889)
- McConnell AFB SWMU 107 (C2-087-71890)
- McConnell AFB SWMU 160 (C2-087-71891)
- McConnell AFB SWMU 207 (C2-087-71892)
- McConnell AFB SWMU 208 (C2-087-71896)
- McConnell AFB LF-34 (C2-087-72286)
- McConnell AFB LF-33 (C2-087-72446)
- McConnell AFB BLDG 692 (C2-087-72447)
- McConnell AFB BLDG 971 (C2-087-72565)
- McConnell AFB BLDG 314 (C2-087-72790)

The Department of the Air Force staff is welcome to come view the KDHE-BER files in accordance with the Kansas Open Records Act. However, the Department of the Air Force should have files on all of the above mentioned sites. If you have any questions, please contact Travis Daneke at (785) 296-6378 or at [tdaneke@kdheks.gov](mailto:tdaneke@kdheks.gov).



### United States Department of the Interior

National Park Service  
Midwest Region



MAY 24 2013

1.D(MWR-PCL/PC)

ER-13/0184

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott Air Force Base, Illinois 62225-5022

Dear Ms. Reynolds:

The Department of the Interior (Department) has requested that the National Park Service (NPS), Midwest Regional Office, prepare a response to our review of the Notice of Intent to Prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the beddown of KC-46A Tanker Aircraft, in Oklahoma, Washington, North Dakota, and Kansas. The NPS offers the following comments and recommendations for your consideration:

The NPS would like the EIS to identify and address any potential impacts to NPS units within the areas identified to house the FTU and MOB 1. The potential staging of these aircraft at Altus Air Force Base in Oklahoma places them in proximity to four NPS sites: Washita Battlefield National Historic Site is approximately 70 miles away and three other sites, Lake Meredith National Recreation Area, Oklahoma City National Memorial, and Chickasaw National Recreation Area are within a distance of 120 miles. Lake Roosevelt National Recreation Area is within 50 miles of Fairchild Air Force Base, Washington, and Tallgrass Prairie National Preserve is within 70 miles of McConnell Air Force Base, Kansas.

The Department and the NPS has a continuing interest in working with the Air Force to ensure impacts to resources of concern to the Department are adequately addressed. For continued consultation and coordination with the issues concerning resources of the NPS, please contact Regional Environmental Coordinator Nick Chevance, Midwest Regional Office, National Park Service, Omaha, Nebraska

We appreciate the opportunity to provide these comments.

Sincerely,

Michael T. Reynolds  
Regional Director



## A.2.6 McConnell AFB IICEP Responses (Continued)

M\_001\_B\_A-R1

For those working Bio for McConnell...

-----Original Message-----

From: [prvs=18257877cc=jean.reynolds@us.af.mil](mailto:prvs=18257877cc=jean.reynolds@us.af.mil) [mailto:[prvs=18257877cc=jean.reynolds@us.af.mil](mailto:prvs=18257877cc=jean.reynolds@us.af.mil)]

On Behalf Of REYNOLDS, JEAN A CIV USAF DoD A7/AFCEC/CZN MidWest Office

Sent: Tuesday, April 30, 2013 7:32 AM

To: Daues, Tom V.

Subject: FW: Project Review: McConnell AFB FTU and MOB 1 in Wichita, Sedgwick Co. (Track 20130485)

-----Original Message-----

From: Bartels, Brian [REDACTED]

Sent: Monday, April 29, 2013 4:15 PM

To: REYNOLDS, JEAN A CIV USAF DoD A7/AFCEC/CZN MidWest Office

Subject: Project Review: McConnell AFB FTU and MOB 1 in Wichita, Sedgwick Co. (Track 20130485)

Dear Mr. Clark:

We have reviewed the provided information concerning the Environmental Impact Statement to assess the potential environmental consequences associated with the beddown of the Formal Training Unit and the first Main Operating Base of the KC-46A tanker aircraft at McConnell AFB in Wichita, Sedgwick County. Currently, there are no state-threatened or state-endangered species concerns within the McConnell AFB; thus, clearance of any potential construction project concerning facilities at McConnell AFB should be granted. However, if McConnell AFB is selected and construction projects proceed, we request detailed project plans as soon as plans are available in order to provide project-specific recommendations. Please send information to Emma Foltz, [REDACTED]

Please consider this email our official review of this proposal. If you have any questions or concerns please feel free to contact me.

Brian

Brian Bartels, Ecologist

Ecological Services

Kansas Dept. of Wildlife, Parks, and Tourism

[REDACTED]

### A.3 TRIBAL CORRESPONDENCE

To support this EIS, the USAF consulted on a government-to-government basis with potentially affected tribes in the Region of Influence (ROI) for each base associated with the KC-46A FTU and MOB 1 scenarios. For the MOB 1 scenarios at Altus, Fairchild, Grand Forks, and McConnell AFB, the ROI includes the areas surrounding the base; for the Altus and McConnell AFB FTU scenarios, the ROI includes the areas surrounding the base and around the auxiliary airfields where FTU aircrews would operate. The table below provides a summarized list of USAF communication with tribes. All tribes listed in Table A-1 received notification letters as well as letters requesting consultation under Section 106 of the NHPA. Several tribes responded to consultation requests or coordination letters, and a brief summary of the responses are included in Table A-1.

Follow-up correspondence was conducted for tribes that did not respond to initial consultation and coordination efforts. This additional outreach may have included additional telephone, e-mail, or letter correspondence. Unless requested otherwise, all tribes received a copy of the Draft EIS.

**Table A-1. Tribal Consultation**

<b>Tribe</b>	<b>Summary Response</b>	<b>Initial Notification Letter</b>	<b>Sec. 106 Consultation Letter</b>	<b>Follow Up Correspondence (email/phone calls)</b>
<b>Altus AFB</b>				
Apache Tribe of Oklahoma	No response	29 March 2013	19 June 2013	7/2/13, 12/13/13
Caddo Indian Nation of Oklahoma	No impact anticipated	29 March 2013	19 June 2013	8/13/13
Cherokee Nation, Oklahoma	Tribal THPO indicated that records not maintained for subject area.	29 March 2013	19 June 2013	7/12/13
Cheyenne and Arapaho Tribes	No impacts	29 March 2013	19 June 2013	8/5/13
Chickasaw Nation	No impacts	29 March 2013	19 June 2013	12/12/13
Comanche Nation, Oklahoma	No properties impacted	29 March 2013	19 June 2013	12/12/13
Kaw Nation, Oklahoma	Tribal Chair requested additional project information. THPO indicated that the area is not in historic or prehistoric properties of the Kaw Nation.	29 March 2013	19 June 2013	7/2/13, 7/8/13 Sec. 106 consultation considered complete. Will provide copies of Draft EIS and Final EIS.
Kiowa Indian Tribe of Oklahoma	No impacts	29 March 2013	19 June 2013	12/12/13
Osage Nation	Requested copy of Draft EIS and any associated cultural resource survey reports for the proposed action.	29 March 2013	19 June 2013	7/2/13, 12/12/13
Wichita and Affiliated Tribes	No response	29 March 2013	19 June 2013	7/2/13, 12/12/13

**Table A-1. Tribal Consultation (Continued)**

<b>Tribe</b>	<b>Summary Response</b>	<b>Initial Notification Letter</b>	<b>Sec. 106 Consultation Letter</b>	<b>Follow Up Correspondence (email/phone calls)</b>
<b>Fairchild AFB</b>				
Coeur d'Alene Tribe	No response	29 March 2013	21 June 2013	7/23/2013, 9/3/2013
Confederated Tribe of the Colville Reservation	No response	29 March 2013	21 June 2013	7/23/2013, 9/3/2013
Kalispel Indian Community	Submitted Section 106 letter response indicating no concerns	29 March 2013	21 June 2013	Not applicable
Spokane Tribe of Indians	Submitted a verbal and written comment during the public review period for the Draft EIS.	29 March 2013	21 June 2013	Not applicable
<b>Grand Forks AFB</b>				
Bois Forte Band of Chippewa Indians	No response	29 March 2013	29 July 2013	Contact attempted by both email and phone on 8-12-13
Cheyenne River Sioux Tribe	Air Force representatives from AFCEC and Grand Forks AFB met with the tribe on December 5 2013. Tribal concerns were noted and a follow up letter (20 December 2013) stating the Air Force determination of no adverse impact is included in this Appendix.	29 March 2013	29 July 2013	Emails sent on 8-12-13, 8-14-13, 8-27-13. Phone calls on 8-12-13, 8-29-13. Additional emails and calls on 9-4-13 resulted in a meeting at Eagle Butte, South Dakota on 5 December 2013. Email sent on 24 December as a follow up to the 20 December letter. Phone call and email on 14 and 17 January.
Crow Creek Sioux Tribe	No response	29 March 2013	29 July 2013	Contact attempted by both email and phone on 8-12-13
Flandreau Santee Sioux	Questionnaire returned by mail. The tribe wants to be part of the public process and indicated that the undertaking may have historical significance. They would like to receive additional information.	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-12-13. A follow up email was sent on 8-27-13. A Draft EIS was provided.
Fond du Lac Band of Lake Superior Chippewa	Responded by email and indicated they would like to receive additional information.	29 March 2013	29 July 2013	A follow up email and phone call was made on 8-12-13. A Draft EIS was provided.
Leech Lake Band of Ojibwe	Responded by letter (5 April 2013). No issues.	29 March 2013	29 July 2013	Section 106 consultation complete
Lower Brule Sioux Indian Tribe	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-12-13
Lower Sioux Indian Community Council	Responded via email. There are no issues and do not want to consult.	29 March 2013	29 July 2013	Section 106 consultation complete
Mille Lacs Band of Ojibwe	Responded by letter (10 April 2013). No issues	29 March 2013	29 July 2013	Section 106 consultation complete
Minnesota Chippewa Tribe, Grand Portage Band	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-12-13

**Table A-1. Tribal Consultation (Continued)**

Tribe	Summary Response	Initial Notification Letter	Sec. 106 Consultation Letter	Follow Up Correspondence (email/phone calls)
<b>Grand Forks AFB (Continued)</b>				
Oglala Sioux Tribe	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-14-13
Prairie Island Sioux Community	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-20-13
Red Lake Band of Chippewa	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-20-13
Rosebud Sioux Tribe	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-20-13
Shakopee Mdewakanton Sioux Community	Responded via email. Does not want to consult/no issues.	29 March 2013	29 July 2013	Section 106 consultation complete
Sisseton-Wahpeton Oyate	Responded via email. Does not want to consult/no issues.	29 March 2013	29 July 2013	Section 106 consultation complete
Spirit Lake Tribal Council/Spirit Lake Tribe	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13
Standing Rock Sioux Tribal Council	Tribe responded by letter (27 May 2013). Requested that the analysis consider noise impacts to fasting and prayers. After additional discussion with the USAF, the tribe indicated that there would be no impacts from this project. Grand Forks AFB followed up and received a confirmation email on 10 December 2013 stating they were satisfied with the USAF response.	29 March 2013	29 July 2013	The Draft EIS was provided and the cultural resource manager followed up with a phone conversation with this tribe. During the conversation, it was explained that should Grand Forks AFB be selected the proposed KC-46A overflights would be at elevations of 18,000 feet and noise levels would not be noticeable on the ground.
Three Affiliated Tribes of the Fort Berthold Reservation, North Dakota or the Mandan, Hidatsa & Arikara Nation	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13
Turtle Mountain Band of Chippewa	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13

**Table A-1. Tribal Consultation (Continued)**

<b>Tribe</b>	<b>Summary Response</b>	<b>Initial Notification Letter</b>	<b>Sec. 106 Consultation Letter</b>	<b>Follow Up Correspondence (email/phone calls)</b>
<b>Grand Forks AFB (Continued)</b>				
Upper Sioux Indian Community	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13
White Earth Band of Minnesota Chippewa	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13
Yankton Sioux Tribe	No response	29 March 2013	29 July 2013	Additional attempts at contacting this tribe were made by phone and email on 8-21-13
<b>McConnell AFB</b>				
Apache Tribe of Oklahoma	No response	29 March 2013	17 July 2013	7/2/13, 12/13/13
Caddo Indian Nation of Oklahoma	Phone conversation with Robert Cast 7/18/13. Remove from list	29 March 2013	17 July 2013	No further Section 106 consultation required.
Cherokee Nation, Oklahoma	Phone conversation with Pat Gwin, temporary THPO. No known issues.	29 March 2013	17 July 2013	7/23/13, 7/25/13
Cheyenne and Arapaho Tribes	No response	29 March 2013	17 July 2013	7/18/13, 7/22/13, 7/25/13, 7/30/13, 12/12/13. Email on 12/12/13
Chickasaw Nation	No response	29 March 2013	17 July 2013	7/30/13
Comanche Nation, Oklahoma	Phone conversation with Jimmy Arterberry. He will look for letters but doubted they would comment.	29 March 2013	17 July 2013	7/18/13
Iowa Tribe of Kansas and Nebraska	No response	29 March 2013	17 July 2013	7/22/13, 7/23/13, 7/25/13, 7/30/13, 12/12/13
Kaw Nation, Oklahoma	No response	29 March 2013	17 July 2013	7/22/13, 7/25/13, 7/30/13
Kiowa Indian Tribe of Oklahoma	Phone conversation with Amie Tah-Bone but no comment on the project.	29 March 2013	17 July 2013	7/18/13, 7/22/13
Osage Nation	Requested copy of Draft EIS and any associated cultural resource survey reports for the proposed action.	29 March 2013	17 July 2013	Copies of the Draft EIS and any survey reports will be provided.
Sac & Fox Nation of Missouri in Kansas and Nebraska	No response	29 March 2013	17 July 2013	7/22/13, 7/25/13, 12/12/13
Wichita and Affiliated Tribes	No response	29 March 2013	17 July 2013	7/22/13, 7/23/13, 7/25/13, 7/30/13, 12/12/13

**Note:** Unless specified, follow-up contacts were by phone.

## A.3.1 Tribal Notification Letter



**DEPARTMENT OF THE AIR FORCE**  
**AIR FORCE CIVIL ENGINEER CENTER**  
**JOINT BASE SAN ANTONIO LACKLAND TEXAS**

29 March 2013

Mr. Dale Clark  
 Chief, Air Force NEPA Center AFCEC/CZN  
 2261 Hughes Ave, Suite 155  
 Lackland AFB TX 78235-9853

Title Name  
 Tribe  
 Address  
 City, State, Zip

Dear Mr./Ms.

## SAMPLE LETTER

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the Formal Training Unit (FTU) and first Main Operating Base (MOB 1) beddown of the KC-46A tanker aircraft. Altus Air Force Base (AFB) in OK and McConnell AFB in KS are proposed alternatives for the FTU mission, and Altus AFB, McConnell AFB, Grand Forks AFB in ND and Fairchild AFB in WA are proposed alternatives for the MOB 1 mission. No base would receive both missions. Additional information on the beddown and EIS process is included in the attached Notice of Intent from the March 26, 2013 Federal Register.

The Air Force will host four public, drop-in type open house scoping meetings in areas near the Air Force bases proposed for this action (see attached scoping brochure). The purpose of the meetings and the scoping period is to solicit comments on the scope of environmental issues to be analyzed in depth in the EIS. Public and agency comments provided at the meetings, as well as written comments received by the Air Force during the scoping period and throughout the environmental process, will be considered in the preparation of the EIS. Additional scoping information can be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

Your participation and scoping comments are welcome on this action. This portion of the project is a part of the EIS planning process which focuses on public involvement. We fully recognize that your tribe is a unique entity not considered "the public." To that end, please note that this letter is for notification purposes only. Any comments or questions regarding this project may be directed to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022, (618) 229-0843, or to the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

Sincerely,

Attachments:  
 Notice of Intent  
 KC-46A FTU and MOB 1 Brochure



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following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

**DATES:** Consideration will be given to all comments received by April 25, 2013.

**Title, Associated Form and OMB Number:** Third Party Collection Program/Medical Services Account/ Other Health Insurance; DD Form 2569; OMB Control Number 0720-TBD (previously OMB Control Number 0704-0323).

**Type of Request:** Extension.  
**Number of Respondents:** 2,936,905.

**Responses per Respondent:** 1.

**Annual Responses:** 2,936,905.

**Average Burden per Response:** 3 minutes.

**Annual Burden Hours:** 146,845.

**Needs and Uses:** The information collection requirement is necessary to obtain health insurance policy information used for coordination of health care benefits and billing third-party payers. DoD implemented the Third Party Collection Program (TPCP) in FY87 based on the authority granted in 10 U.S.C. 1095 and implemented by 32 CFR part 220 in accordance with the Consolidated Omnibus Budget Reconciliation Act of 1986 (COBRA) (Pub. L. 99-272, section 2001, April 7, 1986). Under the TPCP, DoD is authorized to collect from third-party payers the cost of inpatient and outpatient services rendered to DoD beneficiaries who have other health insurance. Military treatment facilities are required to make this form available to third-party payers upon request. A third-party payer may not request any other assignment of benefits form from the subscriber.

**Affected Public:** Business or other for-profit; individuals or households.

**Frequency:** Annually or on occasion (when insurance information changes).

**Respondent's Obligation:** Required to Obtain or Retain Benefits.

**OMB Desk Officer:** Mr. John Kraemer.

Written comments and recommendations on the proposed information collection should be sent to Mr. Kraemer at the Office of Management and Budget, Desk Officer for DoD, Room 10236, New Executive Office Building, Washington, DC 20503.

You may also submit comments, identified by docket number and title, by the following method:

• **Federal eRulemaking Portal:** <http://www.regulations.gov>. Follow the instructions for submitting comments.

**Instructions:** All submissions received must include the agency name, docket number and title for this **Federal Register** document. The general policy

for comments and other submissions from members of the public is to make these submissions available for public viewing on the Internet at <http://www.regulations.gov> as they are received without change, including any personal identifiers or contact information.

**DOD Clearance Officer:** Ms. Patricia Toppings.

Written requests for copies of the information collection proposal should be sent to Ms. Toppings at WHS/ESD Information Management Division, 4800 Mark Center Drive, East Tower, Suite 02G09, Alexandria, VA 22350-3100.

Dated: March 12, 2013.

**Aaron Siegel,**

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2013-06852 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-06-P

## DEPARTMENT OF DEFENSE

## Office of the Secretary

[Docket ID: DOD-2012-OS-0097]

**Defense Transportation Regulation, Part IV**

**AGENCY:** United States Transportation Command (USTRANSCOM), DoD.  
**ACTION:** Announcement.

**SUMMARY:** On September 4, 2012 (77 FR 53873-53874), the Department of Defense published a notice titled Defense Transportation Regulation, Part IV. DoD has completed their review and response to comments received in connection with the Defense Personal Property Program (DP3) Phase III Direct Procurement Method (DPM) business rules. Responses can be found on the Defense Transportation Regulation, Part IV Web site at <http://www.transcom.mil/dtr/part-iv/phaseiii.cfm> (DPM SECTION). All identified changes will be incorporated into the final DPM business rules. The DPM implementation timelines will be based on completion of Defense Personal Property System (DPS) Phase III programming projected for FY17.

**FOR FURTHER INFORMATION CONTACT:** Mr. Jim Teague, United States Transportation Command, TCJ5/4-PI, 508 Scott Drive, Scott Air Force Base, IL 62225-5357; (618) 256-9605.

**SUPPLEMENTARY INFORMATION:** Any subsequent modification(s) to the business rules beyond the above stated changes will be published in the **Federal Register** and incorporated into the Defense Transportation Regulation (DTR) Part IV (DTR 4500.9R). These

program requirements do not impose a legal requirement, obligation, sanction or penalty on the public sector, and will not have an economic impact of \$100 million or more.

## Additional Information

A complete version of the DTR is available via the internet on the USTRANSCOM home page at <http://www.transcom.mil/dtr/part-iv/>.

Dated: March 21, 2013.

**Aaron Siegel,**  
 Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 2013-06854 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-06-P

## DEPARTMENT OF DEFENSE

## Department of the Air Force

**Intent To Prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft**

**AGENCY:** Department of the Air Force, DOD.

**ACTION:** Notice of Intent.

**SUMMARY:** The Air Force is issuing this notice to advise the public of its intent to prepare an Environmental Impact Statement (EIS) for the Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tanker Aircraft. The EIS will assess the potential environmental consequences of beddown down KC-46A tanker aircraft, associated infrastructure and manpower of the FTU and MOB 1 at existing active duty Air Force installations within the continental United States and the no-action alternative.

The FTU squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly, operate, and maintain the KC-46A aircraft. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support.

The proposed basing alternatives for the FTU are:

1. Altus Air Force Base (AFB), Oklahoma
2. McConnell AFB, Kansas

The proposed basing alternatives for MOB 1 are:

1. Altus AFB, Oklahoma
2. Fairchild AFB, Washington
3. Grand Forks AFB, North Dakota
4. McConnell AFB, Kansas

## A.3.1 Tribal Notification Letter (Continued)

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Altus AFB and McConnell AFB are being considered for either the FTU or MOB 1 missions; no base would receive both the FTU and MOB 1 missions.

**Scoping:** In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is soliciting scoping comments from interested state and federal agencies and interested members of the public. The Air Force will hold a series of scoping meetings to further solicit input regarding the scope of the proposed action and alternatives.

1. Scoping meetings will be held in the local communities near the alternative basing locations. The scheduled dates, times, locations and addresses for the scoping meetings will also be published in local media a minimum of 15 days prior to the scoping meetings.

1. **Dates:** The Air Force intends to hold scoping meetings from 5:00 p.m. to 8:00 p.m. in the following communities on the following dates:

1. Altus Air Force Base—April 9, 2013 at the Southwest Technology Center, 711 West Tamarack Road, Altus, OK
2. McConnell Air Force Base—April 11, 2013 at the Eugene M. Hughes Metropolitan Complex, 5015 East 29th Street N, Wichita, KS
3. Fairchild Air Force Base—April 16, 2013 at the Lincoln Center, 1316 North Lincoln Street, Spokane, WA
4. Grand Forks Air Force Base—April 18, 2013 at the Ramada Inn, 1205 North 43rd Street, Grand Forks, ND

**SUPPLEMENTARY INFORMATION:** The project Web site provides more information on the EIS and can be used to submit scoping comments; scoping comments may also be submitted to the address below. As a convenience for comments submitted by mail, a comment form is available for download on the Web site. Comments will be accepted at any time during the environmental impact analysis process. However, to ensure the Air Force has sufficient time to consider public input in the preparation of the Draft EIS, scoping comments should be submitted to the Web site or the address listed below by May 17, 2013.

**FOR FURTHER INFORMATION CONTACT:** Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, Illinois 62225-5022; Phone:

Henry Williams Jr.,  
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2013-06840 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-10-P

### DEPARTMENT OF DEFENSE

#### Department of the Air Force

##### U.S. Air Force Scientific Advisory Board; Notice of Meeting

**AGENCY:** Department of the Air Force, U.S. Air Force Scientific Advisory Board.

**ACTION:** Meeting notice.

**SUMMARY:** Under the provisions of the Federal Advisory Committee Act of 1972 (5 U.S.C., Appendix, as amended), the Government in the Sunshine Act of 1976 (5 U.S.C. 552b, as amended), and 41 CFR 102-3.150, the Department of Defense announces that the United States Air Force Scientific Advisory Board (SAB) quarterly meeting will take place on 9 April 2013 at the Eubank Conference Center on Barksdale AFB, LA. The SAB will meet 7:45 a.m.–12:45 p.m. with all sessions closed to the public.

The purpose of this quarterly meeting is to review the status of the FY13 SAB studies directed by the Secretary of the Air Force: countering electro-optical and infrared targeting system threats to our aircraft, disaggregation of satellite mission applications, and communicating in a contested environment. The SAB will receive a presentation on the mission of Air Force Global Strike Command, the host for the SAB's Spring Board Meeting. This board meeting will also include the publication status of the FY12 studies, the latest updates on the ongoing study outbriefs, as well as discussion of the SAB's review of Air Force Research Laboratory (AFRL) science and technology investments. The remaining FY13 Board schedule and internal restructuring options will also be discussed.

In accordance with 5 U.S.C. 552b, as amended, and 41 CFR 102-3.155, this meeting of the United States Air Force Scientific Advisory Board will be closed to the public because it will involve information and matters covered by sections 5 U.S.C. 552b(c)(1) and (2).

Any member of the public wishing to provide input to the United States Air Force Scientific Advisory Board should submit a written statement in accordance with 41 CFR 102-3.140(c) and section 10(a)(3) of the Federal Advisory Committee Act and the procedures described in this paragraph. Written statements can be submitted to the Designated Federal Officer at the address detailed below at any time. Statements being submitted in response to the agenda mentioned in this notice must be received by the Designated

Federal Officer at the address listed below at least five calendar days prior to the meeting which is the subject of this notice. Written statements received after this date may not be provided to or considered by the United States Air Force Scientific Advisory Board until its next meeting. The Designated Federal Officer will review all timely submissions with the United States Air Force Scientific Advisory Board Chairperson and ensure they are provided to members of the United States Air Force Scientific Advisory Board before the meeting that is the subject of this notice.

**FOR FURTHER INFORMATION CONTACT:** The United States Air Force Scientific Advisory Board Executive Director and Designated Federal Officer, Lt Col Derek Lincoln, 240-612-5502, United States Air Force Scientific Advisory Board, 1500 West Perimeter Road, Ste. #3300, Joint Base Andrews, MD 20762, Derek.Lincoln@pentagon.af.mil.

Henry Williams Jr.,  
Acting Air Force Federal Register Liaison Officer.

[FR Doc. 2013-06781 Filed 3-25-13; 8:45 am]

BILLING CODE 5001-10-P

### DEPARTMENT OF EDUCATION

[Docket No. ED-2013-ICCD-0037]

#### Agency Information Collection Activities; Comment Request; Upward Bound and Upward Bound Math Science Annual Performance Report

**AGENCY:** The Office of Postsecondary Education (OPE), Department of Education (OE).

**ACTION:** Notice.

**SUMMARY:** In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. chapter 3501 *et seq.*), ED is proposing a new information collection. **DATES:** Interested persons are invited to submit comments on or before May 28, 2013.

**ADDRESSES:** Comments submitted in response to this notice should be submitted electronically through the Federal eRulemaking Portal at <http://www.regulations.gov> by selecting Docket ID number ED-2013-ICCD-0037 or via postal mail, commercial delivery, or hand delivery. Please note that comments submitted by fax or email and those submitted after the comment period will not be accepted. Written requests for information or comments submitted by postal mail or delivery should be addressed to the Director of the Information Collection Clearance



The U.S. Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of basing and operating the KC-46A tanker aircraft, associated infrastructure and manpower to establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is holding public scoping meetings to determine the EIS scope (i.e. what will be covered and in what detail) by soliciting comments from interested state and federal agencies and interested members of the public.

### The National Environmental Policy Act (NEPA)

NEPA is our national mandate for making informed decisions while considering environmental impacts. When Federal agencies propose projects having the potential to significantly impact the environment, NEPA requires the following process be undertaken as part of planning before final decisions are made:

- Evaluation and consideration of potential environmental consequences for proposals that may significantly impact the environment, and
- Consideration of public and government agency comments.

Where the potential for significant environmental impacts exists, this evaluation is presented in an EIS, which:

- Identifies and describes the affected environment;
- Evaluates the potential environmental consequences from a range of reasonable alternatives; and
- Identifies environmental permits and specific mitigation measures that could avoid, minimize, or reduce potential environment consequences.

### The EIS Timeline



### Notice of Intent and Scoping

The EIS begins with an NOI, which is published in the *Federal Register* to announce the Air Force's intent to prepare an EIS on the KC-46A FTU and MOB 1 beddown proposed action and alternatives. The NOI is the beginning of the public scoping process, including community scoping meetings, to provide the public and government agencies and entities time to review the proposed action and alternatives.

### A.3.1 Tribal Notification Letter (Continued)

#### Proposed Action: FTU and MOB 1 KC-46A Tanker Beddown

The KC-46A EIS will evaluate the potential environmental consequences of two different actions:

1. Beddown of up to eight KC-46A tanker aircraft for one squadron at one base for the FTU; and
2. Beddown of 36 KC-46A aircraft for three squadrons at one base for the MOB 1.

#### The proposed FTU alternative locations are:

- Altus Air Force Base (AFB), Oklahoma
- McConnell AFB, Kansas

The FTU Mission would require the use of various auxiliary airfields in Oklahoma, Texas and Kansas.

#### The proposed MOB 1 alternative locations are:

- Altus AFB, Oklahoma
- Fairchild AFB, Washington
- Grand Forks AFB, North Dakota
- McConnell AFB, Kansas

*The Air Force is in the early stages of the EIS Process and no decision has been made as to final KC-46A FTU and MOB 1 beddown location(s).*

Altus AFB and McConnell AFB are being considered for both the FTU or MOB 1 missions. No base would be selected for both the FTU and MOB 1 missions.



U.S. Map of FTU and MOB 1 Candidate Bases

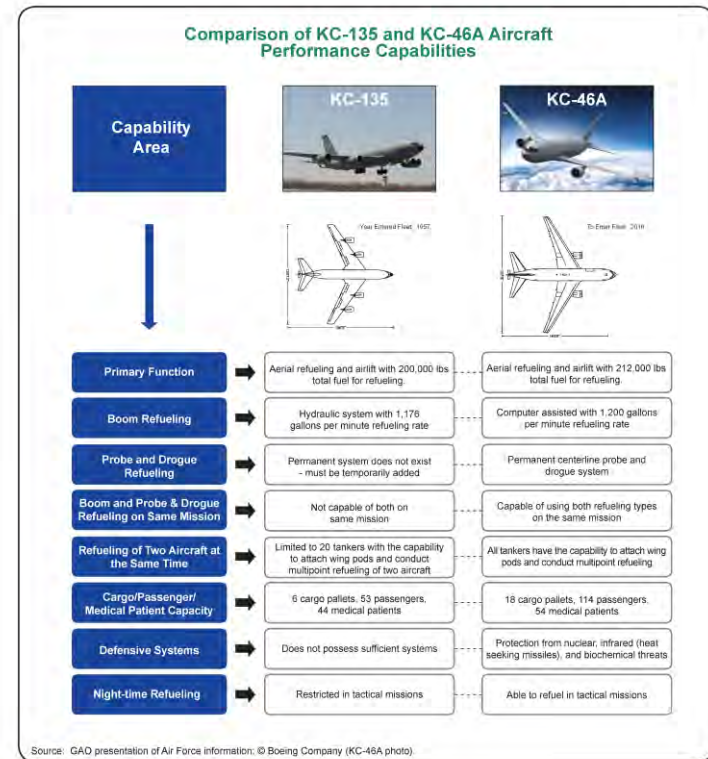
#### No-Action Alternative

Under the No-Action alternative, basing of the KC-46A aircraft would not occur at this time. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location, which will provide a baseline for decision-makers.

#### Purpose and Need: Tanker Modernization

The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training.

The purpose of the KC-46A beddown is to provide locations for training and flight operations. The KC-46A tankers are needed to support a high-threat, multi-role warfighting capability to Commanders worldwide. Trained pilots and personnel must be available to meet necessary KC-46A scheduled inventory replenishment dates as older KC-135 tanker aircraft are withdrawn from the inventory.



## A.3.1 Tribal Notification Letter (Continued)

### Environmental Resources

The Air Force understands the potential for the KC-46A FTU and MOB 1 beddown to affect environmental resources. As part of the EIS, the Air Force will analyze potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the inclusion of KC-46A training and flight operation activities. The environmental resource areas, to the right, are currently under consideration in the EIS.

#### Please take this opportunity to:

- ☒ Learn about the proposal,
- ☒ Identify community-specific issues,
- ☒ Make sure you are included on our mailing list.



### Public Scoping Meetings

5:00 p.m. - 8:00 p.m.

#### April 9, 2013

Altus Air Force Base  
Southwest Technology Center  
711 W. Tamarack Rd., Altus, OK

#### April 11, 2013

McConnell Air Force Base  
Eugene M. Hughes Metro Complex Rm. 180  
5015 E. 29th St N., Wichita, KS

#### April 16, 2013

Fairchild Air Force Base  
Lincoln Center, 1316 North Lincoln Street  
Spokane, WA

#### April 18, 2013

Grand Forks Air Force Base  
Ramada Inn, 1205 North 43rd Street  
Grand Forks, ND

### Environmental Resource Areas include:

#### Airspace Operations

- Airspace
- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety



#### Natural Resources

- Geology and Soils
- Surface Water and Groundwater
- Wetlands and Floodplains
- Biological Resources



#### Cultural Resources

- Archaeological, Architectural, and Traditional Resources

#### Human Resources

- Land Use
- Recreation
- Socioeconomics
- Environmental Justice and Protection of Children



#### Community Infrastructure

- Infrastructure (utilities and public services)
- Hazardous Materials and Waste
- Transportation



### How to Submit Comments

Submit comments electronically at  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)  
or by mail before May 17, 2013 to:

Ms. Jean Reynolds  
U.S. Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

**A.3.2 Altus AFB Tribal Notification Mailing List**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
Mr.	Jimmy	Arterberry		Tribal Historic Preservation Office	Comanche Nation	Lawton	OK	73502
Mr.	James	Munkres		Tribal Historic Preservation Office	Osage Tribe	Pawhuska	OK	74056
Director	Donna	Prengiss	Director		Apache Tribe	Andarko	OK	73005
Mr.	Robert	Cast		Tribal Historic Preservation Office	Caddo Nation of Oklahoma	Binger	OK	73009
Chairperson	Brenda	Edwards	Chairperson		Caddo Nation of Oklahoma	Binger	OK	73009
Principal Chief	Bill John	Baker	Principal Chief		Cherokee Nation	Tahlequah	OK	74464
	Pat	Gwin	Historic Preservation Tribal Officer	Tribal Historic Preservation Office	Cherokee Nation	Tahlequah	OK	74465
Governor	Janice	Boswell	Governor		Cheyenne - Arapaho Tribes	Concho	OK	73022
Ms.	Lynette	Gray		Tribal Historic Preservation Office	Cheyenne - Arapaho Tribes	Concho	OK	73022
Governor	Bill	Anoatubby	Governor		Chickasaw Nation	Ada	OK	74280
Chairman	Wallace	Coffey	Chairman		Comanche Nation	Lawton	OK	73502
Ms.	Crystal	Douglas		Tribal Historic Preservation Office	Kaw Nation	Kaw City	OK	74641
Mr.	Guy	Munroe	Chairman & CEO		Kaw Nation	Kaw City	OK	74641
Ms.	Amie	Tah-Bone	Museum Director & Acting NAGPRA Representative,	The Kiowa Museum & NAGPRA Program	Kiowa Indian Tribe of Oklahoma	Carnegie	OK	73015
Chairman	Ronald "Dawes"	Twohatchet	Chairman		Kiowa Indian Tribe of Oklahoma	Carnegie	OK	73015
Mr.	John D.	Red Eagle	Principal Chief		Osage Tribe	Pawhuska	OK	74056
	Terri	Parton	President		Wichita and Affiliated Tribes (Wichita, Keechi, Waco and Tawakonie)	Anadarko	OK	73005

**A.3.3 Fairchild AFB Tribal Notification Mailing List**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
	Chief	Allen	Chairman		Coeur D'Alene Tribe of the Coeur D'Alene Reservation	Plummer	ID	83851
Dr.	Jill	Wagner		Tribal Historic Preservation Office	Coeur D'Alene Tribe of the Coeur D'Alene Reservation	Plummer	ID	83851
Mr.	Michael	Finley	Business Council Chairman		Confederated Tribes of the Colville Reservation	Nespelem	WA	99155-0150
Mr.	Guy	Moura	Acting Tribal Historic Preservation Officer	Tribal Historic Preservation Office	Confederated Tribes of the Colville Reservation	Nespelem	WA	99155-0150
Mr.	Glen	Nenema	Chairman		Kalispel Indian Community of the Kalispel Reservation	Usk	MN	99180-0039
	Randy	Abrahamson		Tribal Historic Preservation Office	Spokane Tribe of the Spokane Reservation	Wellpinit	WA	99040
Mr.	Rudy	Peone	Chairman		Spokane Tribe of the Spokane Reservation	Wellpinit	WA	99040

**A.3.4 Grand Forks AFB Tribal Notification Mailing List**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
Ms.	Rosemary	Berens		Tribal Historic Preservation Office	Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe	Nett Lake	MN	55772
Chairman	Kevin	Leecy	Chairman		Bois Forte Band (Nett Lake) of the Minnesota Chippewa Tribe	Nett Lake	MN	55772
Mr.	Kevin	Keckler	Chairman		Cheyenne River Sioux Tribe of the Cheyenne River Reservation	Eagle Butte	SD	57625
Mr.	Steve	Vance		Tribal Historic Preservation Office	Cheyenne River Sioux Tribe of the Cheyenne River Reservation	Eagle Butte	SD	57625
Mr.	Brandon	Sazue, Sr.	Chairman		Crow Creek Sioux Tribe of the Crow Creek Reservation	Fort Thompson	SD	57339
Ms.	Wanda	Wells		Tribal Historic Preservation Office	Crow Creek Sioux Tribe of the Crow Creek Reservation	Fort Thompson	SD	57339
Mr.	Anthony	Reider	President		Flandreau Santee Sioux Tribe of South Dakota	Flandreau	SD	57028
Mr.	James B. "JB"	Weston		Tribal Historic Preservation Office	Flandreau Santee Sioux Tribe of South Dakota	Flandreau	SD	57028
Mr.	LeRoy	Defoe		Tribal Historic Preservation Office	Fond du Lac Band of the Minnesota Chippewa Tribe	Cloquet	MN	55720
Ms.	Karen R.	Diver	Chairwoman		Fond du Lac Band of the Minnesota Chippewa Tribe	Cloquet	MN	55720
Mr.	Norman W.	Deschampe	Chairman		Grand Portage Band of the Minnesota Chippewa Tribe	Grand Portage	MN	55605
Ms.	Mary Ann	Gagnon		Tribal Historic Preservation Office	Grand Portage Band of the Minnesota Chippewa Tribe	Grand Portage	MN	55605
Ms.	Carri	Jones	Chairwoman		Leech Lake Band of the Minnesota Chippewa Tribe	Cas Lake	MN	56633
Ms.	Gina	Lemon		Tribal Historic Preservation Office	Leech Lake Band of the Minnesota Chippewa Tribe	Cas Lake	MN	56633
Ms.	Clair	Green		Tribal Historic Preservation Office	Lower Brule Sioux Tribe of the Lower Brule Reservation	Lower Brule	SD	57548-0187

**A.3.4 Grand Forks AFB Tribal Notification Mailing List (Continued)**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
Mr.	Michael	Jandreque	Chairman		Lower Brule Sioux Tribe of the Lower Brule Reservation	Lower Brule	SD	57548-0187
Mr.	Anthony	Morse		Tribal Historic Preservation Office	Lower Sioux Indian Community in the State of Minnesota	Morton	MN	56270
Mr.	Denny	Prescott	Tribal President		Lower Sioux Indian Community in the State of Minnesota	Morton	MN	56270
Mr.	Elgin	Crowsbreast		Tribal Historic Preservation Office	Three Affiliated Tribes of the Fort Berthold Reservation	New Town	ND	58763
Mr.	Tex G.	Hall	Chairman		Three Affiliated Tribes of the Fort Berthold Reservation	New Town	ND	58763
	Benjamin	Melanie	Chief Executive		Mille Lacs Band of the Minnesota Chippewa Tribe	Onamia	MN	56359
Ms	Natalie	Weyaus		Tribal Historic Preservation Office	Mille Lacs Band of the Minnesota Chippewa Tribe	Onamia	MN	56359
Mr.	Bryan	Brewer	President		Oglala Sioux Tribe of the Pine Ridge Reservation	Pine Ridge	SD	57770-2070
	Wilmer	Mesteth		Tribal Historic Preservation Office	Oglala Sioux Tribe of the Pine Ridge Reservation	Pine Ridge	SD	57770
Ms.	Audrey	Kohnen	Tribal Chairperson		Prairie Island Indian Community in the State of Minnesota	Welch	MN	55089
Mr.	Floyd	Jourdain	Chairman		Red Lake Band of Chippewa Indians	Red Lake	MN	56671
Mr.	Russell	Eagle Bear		Tribal Historic Preservation Office	Rosebud Sioux Tribe of the Rosebud Indian Reservation	Rosebud	SD	57570
Mr.	Cyril	Scott	President		Rosebud Sioux Tribe of the Rosebud Indian Reservation	Rosebud	SD	57570
Mr.	Charlie	Vig	Chairman		Shakopee Mdewakanton Sioux Community of Minnesota	Prior Lake	MN	55372

**A.3.4 Grand Forks AFB Tribal Notification Mailing List (Continued)**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
Mr.	Leonard	Wabasha		Tribal Historic Preservation Office	Shakopee Mdewakanton Sioux Community of Minnesota	Prior Lake	MN	55372
Ms.	Dianne	Desrosiers		Tribal Historic Preservation Office	Sisseton-Wahpeton Oyate of the Lake Traverse Reservation	Sisseton	SD	57262
Mr.	Robert	Shepherd	Chairman		Sisseton-Wahpeton Oyate of the Lake Traverse Reservation	Agency Village	SD	57262-0509
Mr.	Roger	Yankton	Chairperson		Spirit Lake Tribe	Fort Totten	ND	58335
Mr.	Charles	Murphy	Chairman		Standing Rock Sioux Tribe (North Dakota and South Dakota)	Fort Yates	ND	58538
	Waste'Win	Young		Tribal Historic Preservation Office	Standing Rock Sioux Tribe (North Dakota and South Dakota)	Fort Yates	ND	58538
Mr.	Kade	Ferris		Tribal Historic Preservation Office	Turtle Mountain Band of Chippewa Indians of North Dakota	Belcourt	ND	58316
Mr.	Merle	St. Clair	Chairman		Turtle Mountain Band of Chippewa Indians of North Dakota	Belcourt	ND	58316
Mr.	Kevin	Jensvold	Chairman		Upper Sioux Community	Granite Falls	MN	56241
	Marlow	LaBatte		Tribal Historic Preservation Office	Upper Sioux Community	Granite Falls	MN	56241
Mr.	Renee	Lampi		Tribal Historic Preservation Office	White Earth Band of the Minnesota Chippewa Tribe	White Earth	MN	56591
Ms.	Erma	Vizenor	Chairwoman		White Earth Band of the Minnesota Chippewa Tribe	White Earth	MN	56591
Mr.	Thurman	Cournoyer	Chairman		Yankton Sioux Tribe of South Dakota	Wagner	SD	57380
Ms.	Lana M.	Gravatt	THPO	Tribal Historic Preservation Office	Yankton Sioux Tribe of South Dakota	Wagner	SD	57380

**A.3.5 McConnell AFB Tribal Notification Mailing List**

Salutation	First Name	Last Name	Title	Organization	Tribe	City	State	Zip
Mr.	F. Martin	Fee		Tribal Historic Preservation Office	Iowa Tribe (Kansas and Nebraska)	White Cloud	KS	66094
Mr.	Timmothy	Rhodd	Chairman		Iowa Tribe (Kansas and Nebraska)	White Cloud	KS	66094
	Twen	Barton	Chairperson		Sac and Fox Nation of Missouri (Kansas and Nebraska)	Reserve	KS	66434
Director	Donna	Prengiss	Director		Apache Tribe	Andarko	OK	73005
Mr.	Robert	Cast		Tribal Historic Preservation Office	Caddo Nation of Oklahoma	Binger	OK	73009
Chairperson	Brenda	Edwards	Chairperson		Caddo Nation of Oklahoma	Binger	OK	73009
Principal Chief	Bill John	Baker	Principal Chief		Cherokee Nation	Tahlequah	OK	74464
	Pat	Gwin	Historic Preservation Officer	Tribal Historic Preservation Office	Cherokee Nation	Tahlequah	OK	74465
Governor	Janice	Boswell	Governor		Cheyenne - Arapaho Tribes	Concho	OK	73022
Ms.	Lynette	Gray		Tribal Historic Preservation Office	Cheyenne - Arapaho Tribes	Concho	OK	73022
Governor	Bill	Anoatubby	Governor		Chickasaw Nation	Ada	OK	74280
Chairman	Wallace	Coffey	Chairman		Comanche Nation	Lawton	OK	73502
Ms.	Crystal	Douglas		Tribal Historic Preservation Office	Kaw Nation	Kaw City	OK	74641
Mr.	Guy	Munroe	Chairman & CEO		Kaw Nation	Kaw City	OK	74641
Ms.	Amie	Tah-Bone	Museum Director & Acting NAGPRA Representative	The Kiowa Museum & NAGPRA Program	Kiowa Indian Tribe of Oklahoma	Carnegie	OK	73015
Chairman	Ronald "Dawes"	Twohatchet	Chairman		Kiowa Indian Tribe of Oklahoma	Carnegie	OK	73015
Mr.	John D.	Red Eagle	Principal Chief		Osage Tribe	Pawhuska	OK	74056
	Terri	Parton	President		Wichita and Affiliated Tribes (Wichita, Keechi, Waco and Tawakonie)	Anadarko	OK	73005

## A.4 NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106 TRIBAL CONSULTATION

### A.4.1 Altus AFB NHPA Section 106 Tribal Consultation Letter

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A\_001\_C\_A



DEPARTMENT OF THE AIR FORCE  
97TH AIR MOBILITY WING  
ALTUS AIR FORCE BASE OKLAHOMA

19 Jun 13

Colonel Anthony B. Krawietz  
Commander, 97th Air Mobility Wing  
100 Inez Blvd, Ste 1  
Altus AFB, OK 73523

SAMPLE LETTER



Dear [REDACTED]

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) beddown of the KC-46A tanker aircraft. Altus Air Force Base (AFB) in OK and McConnell AFB in KS are proposed alternatives for the FTU mission, and Altus AFB, McConnell AFB, Grand Forks AFB in ND and Fairchild AFB in WA are proposed alternatives for the MOB 1 mission. No base would receive both missions. A no-action alternative, where the KC-46A aircraft would not be located at any of these installations, will also be examined.

With this letter, Altus Air Force Base invites the [REDACTED] Tribe to provide input regarding this NEPA analysis, as well as on any National Historic Preservation Act (NHPA) Section 106 concerns with the proposed basing of KC-46A aircraft here. Additional information on the beddown and EIS process was included in the initial Interagency/Intergovernmental Coordination for Environmental Planning letter sent in early April, 2013, and can be found in the attachments to this letter. Updated information about the proposed basing of the KC-46A can also be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

If Altus AFB is selected for the KC-46A mission, the KC-46A would augment the C-17 and KC-135 aircraft currently based at Altus. The KC-46A would operate in existing airspace, and the types of flight operations would mirror existing KC-135 operations. The KC-46A would use existing air refueling tracks and fuel jettison areas, if necessary. The elevation of the current air refueling tracks for the KC-135 vary but are generally at elevations of 14,000 to 24,000 feet above ground level. Preliminary analysis indicates that noise levels from these operations would be similar to noise levels associated with the C-17 and KC-135 missions. Therefore, the Air Force anticipates the area of potential effect for this action will be limited to the areas of construction, demolition, and renovation at each installation. For bases that are proposed for an

FTU mission (McConnell and Altus AFB), the area of potential effect would also include the proposed auxiliary fields.

The KC-46A FTU and MOB 1 Beddown EIS will analyze the environmental impacts of the training, and flying operations of the new aircraft. It will also evaluate the personnel changes, new construction and use of existing facilities on-base. We expect the Draft KC-46A FTU and MOB 1 Beddown EIS to be released in the fall of 2013 for public comment.

We request your help in identifying and evaluating whether there are any significant cultural resources in the area of potential effect, defined as the installation where operations will occur. The KC-46A would fly much of the same area currently flown by Altus C-17 and KC-135. During previous projects, the [REDACTED] Tribe has not identified any instances of impacts to traditional use or locations of cultural importance in the airspace as currently used. However, it may be that you have concerns that are currently unknown to us. If you want to identify such areas of concern please respond by requesting a confidential meeting to discuss appropriate steps the Air Force could take.

My staff will be contacting your office by telephone to discuss the KC-46A proposal and expected impacts. For staff questions, comments, or input on the NEPA or NHPA Section 106 review and process, please contact Mr. Jim Bellon, Altus AFB Cultural Resources Manager, [james.bellon@us.af.mil](mailto:james.bellon@us.af.mil) (580) 481-7606.

Please take this opportunity to respond with your preferences selected from (or added to) the list on the endorsement page, Attachment 4. I look forward to receiving any input you may have regarding this endeavor.

Sincerely

  
ANTHONY B. KRAWIETZ, Colonel, USAF  
Commander, 97th Air Mobility Wing

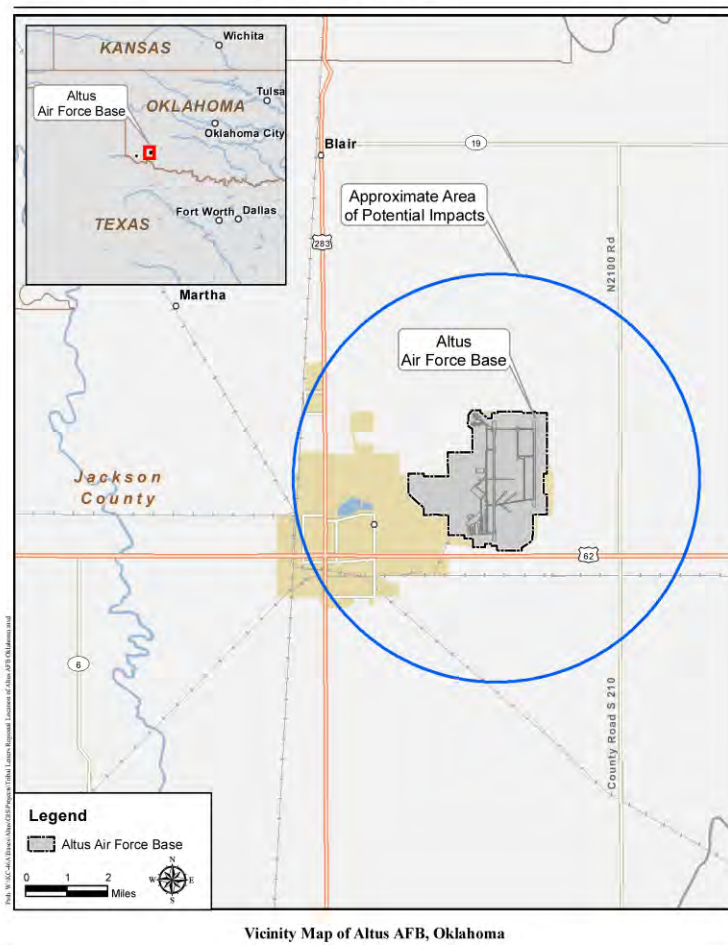
#### 5 Attachments

1. Vicinity Map of Altus AFB
2. Auxiliary Field Locations
3. KC-46A FTU and MOB 1 Brochure
4. Section 106 Consultation Questionnaire
5. Stamped, addressed return envelope

## A.4.1 Altus AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



A\_001\_C\_A

KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



## A.4.1 Altus AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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The U.S. Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of basing and operating the KC-46A tanker aircraft, associated infrastructure and manpower to establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is holding public scoping meetings to determine the EIS scope (i.e. what will be covered and in what detail) by soliciting comments from interested state and federal agencies and interested members of the public.

### The National Environmental Policy Act (NEPA)

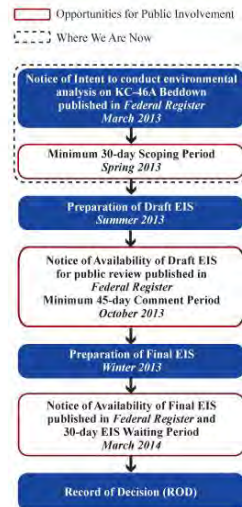
NEPA is our national mandate for making informed decisions while considering environmental impacts. When Federal agencies propose projects having the potential to significantly impact the environment, NEPA requires the following process be undertaken as part of planning before final decisions are made:

- Evaluation and consideration of potential environmental consequences for proposals that may significantly impact the environment, and
- Consideration of public and government agency comments.

Where the potential for significant environmental impacts exists, this evaluation is presented in an EIS, which:

- Identifies and describes the affected environment;
- Evaluates the potential environmental consequences from a range of reasonable alternatives; and
- Identifies environmental permits and specific mitigation measures that could avoid, minimize, or reduce potential environment consequences.

### The EIS Timeline



### Notice of Intent and Scoping

The EIS begins with an NOI, which is published in the *Federal Register* to announce the Air Force's intent to prepare an EIS on the KC-46A FTU and MOB 1 beddown proposed action and alternatives. The NOI is the beginning of the public scoping process, including community scoping meetings, to provide the public and government agencies and entities time to review the proposed action and alternatives.

### Proposed Action: FTU and MOB 1 KC-46A Tanker Beddown

The KC-46A EIS will evaluate the potential environmental consequences of two different actions:

1. Beddown of up to eight KC-46A tanker aircraft for one squadron at one base for the FTU; and
2. Beddown of 36 KC-46A aircraft for three squadrons at one base for the MOB 1.

#### The proposed FTU alternative locations are:

- Altus Air Force Base (AFB), Oklahoma
- McConnell AFB, Kansas

The FTU Mission would require the use of various auxiliary airfields in Oklahoma, Texas and Kansas.

#### The proposed MOB 1 alternative locations are:

- Altus AFB, Oklahoma
- Fairchild AFB, Washington
- Grand Forks AFB, North Dakota
- McConnell AFB, Kansas

*The Air Force is in the early stages of the EIS Process and no decision has been made as to final KC-46A FTU and MOB 1 beddown location(s).*

Altus AFB and McConnell AFB are being considered for both the FTU or MOB 1 missions. No base would be selected for both the FTU and MOB 1 missions.



U.S. Map of FTU and MOB 1 Candidate Bases

### No-Action Alternative

Under the No-Action alternative, basing of the KC-46A aircraft would not occur at this time. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location, which will provide a baseline for decision-makers.

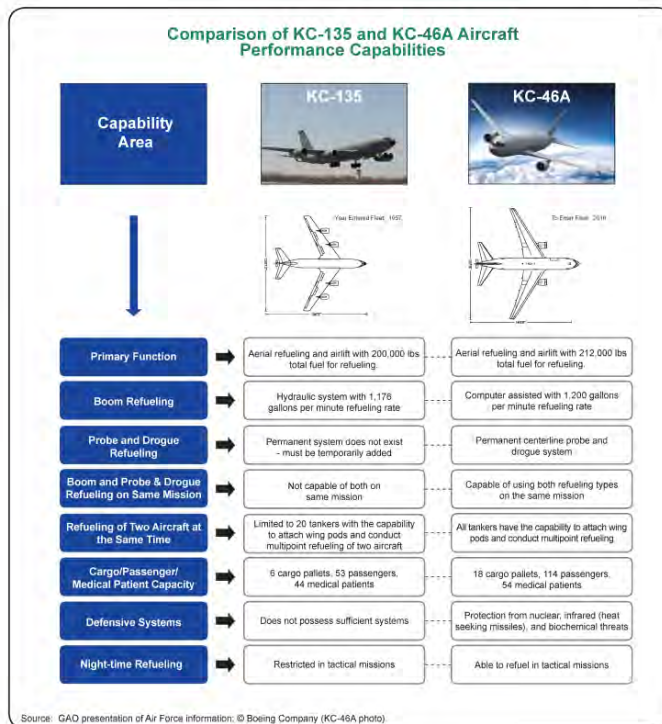
## A.4.1 Altus AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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**Purpose and Need: Tanker Modernization**

The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training.

The purpose of the KC-46A beddown is to provide locations for training and flight operations. The KC-46A tankers are needed to support a high-threat, multi-role warfighting capability to Commanders worldwide. Trained pilots and personnel must be available to meet necessary KC-46A scheduled inventory replenishment dates as older KC-135 tanker aircraft are withdrawn from the inventory.



3

**Environmental Resources**

The Air Force understands the potential for the KC-46A FTU and MOB 1 beddown to affect environmental resources. As part of the EIS, the Air Force will analyze potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the inclusion of KC-46A training and flight operation activities. The environmental resource areas, to the right, are currently under consideration in the EIS.

**Please take this opportunity to:**

- ☒ Learn about the proposal,
- ☒ Identify community-specific issues,
- ☒ Make sure you are included on our mailing list.


**Public Scoping Meetings**  
**5:00 p.m. - 8:00 p.m.**
**April 9, 2013**

Altus Air Force Base  
Southwest Technology Center  
711 W. Tamarack Rd., Altus, OK

**April 11, 2013**

McConnell Air Force Base  
Eugene M. Hughes Metro Complex Rm. 180  
5015 E. 29th St N., Wichita, KS

**April 16, 2013**

Fairchild Air Force Base  
Lincoln Center, 1316 North Lincoln Street  
Spokane, WA

**April 18, 2013**

Grand Forks Air Force Base  
Ramada Inn, 1205 North 43rd Street  
Grand Forks, ND

**Environmental Resource Areas include:****Airspace Operations**

- Airspace
- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety

**Natural Resources**

- Geology and Soils
- Surface Water and Groundwater
- Wetlands and Floodplains
- Biological Resources

**Cultural Resources**

- Archaeological, Architectural, and Traditional Resources

**Human Resources**

- Land Use
- Recreation
- Socioeconomics
- Environmental Justice and Protection of Children

**Community Infrastructure**

- Infrastructure (utilities and public services)
- Hazardous Materials and Waste
- Transportation

**How to Submit Comments**

Submit comments electronically at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com) or by mail before May 17, 2013 to:

Ms. Jean Reynolds  
U.S. Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

4

#### A.4.1 Altus AFB NHPA Section 106 Tribal Consultation Letter (Continued)

A\_001\_C\_A

### SAMPLE

#### SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base  
Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

**Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to [REDACTED]@us.af.mil:**

☐ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☐ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☐ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☐ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

\_\_\_\_ Phone: \_\_\_\_\_

Please print email: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please mail response in provided postpaid envelope to:

[REDACTED]  
KC-46A FTU and MOB 1 EIS

Or, e-mail to:

[REDACTED]

A.4.1.1 Altus AFB NHPA Section 106 Tribal Consultation Responses

A\_006\_C\_T-R1

A\_011\_C\_T-R1

SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to James.Bellon@us.af.mil:

☐ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☒ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☒ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☒ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

Margaret Anguac Phone: 405/422-7630

Please print email: marguac@ca-tribes.org

Signed: Margaret Anguac, THPO Date: 7-9-13

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

The subject area is solidly within an area that historically relates to the two tribes' journeys for hunting, camping, and warfare.

Please mail response in provided postpaid envelope to:

James Bellon  
KC-46A FTU and MOB 1 EIS  
401 L Ave  
Altus AFB, OK 73523

Or, e-mail to: James.Bellon@us.af.mil

SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to James.Bellon@us.af.mil:

☒ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☐ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☐ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☐ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

Crystal Douglas Phone: 580-269-2552

Please print email: Crystal-Douglas@KawNation.com

Signed: Crystal Douglas Date: 7-8-13

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

Your area is not within the KawNation Historic or Prehistoric properties. Thank you for the opportunity to comment.

Please mail response in provided postpaid envelope to:

James Bellon  
KC-46A FTU and MOB 1 EIS  
401 L Ave  
Altus AFB, OK 73523

Or, e-mail to: James.Bellon@us.af.mil

A.4.1.1 Altus AFB NHPA Section 106 Tribal Consultation Responses (Continued)

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SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to James.Bellon@us.af.mil:

☒ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☐ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☐ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☒ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

GUY MUNROE, KAW NATION/ CHAIR Phone: (580) 269-2552

Please print email: gmunroe@kawnation.com

Signed:  Date: 1-2-13

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

---

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Please mail response in provided postpaid envelope to:

James Bellon  
KC-46A FTU and MOB 1 EIS  
401 L Ave  
Altus AFB, OK 73523

Or, e-mail to: James.Bellon@us.af.mil

TRIBAL HISTORIC PRESERVATION OFFICE

Date: May 28, 2013

File: 1213-1155KS/OK-4

RE: USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas

USAF, AFCEC/CZN Midwest Office  
Jean Reynolds  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project listed as USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas. The Osage Nation requests a copy of the Draft Environmental Impact Statement and any associated cultural resource survey reports.

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. The Osage Nation anticipates reviewing and commenting on the planned Environmental Impact Statement and any associated cultural resource survey reports for the proposed USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas.

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

  
James Munkres  
Archaeologist I

F-3

## A.4.2 Fairchild AFB NHPA Section 106 Tribal Consultation Letter

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 92D AIR REFUELING WING (AMC)  
FAIRCHILD AIR FORCE BASE WASHINGTON

21 JUN 2013

Colonel Brian M. Newberry  
Commander  
1 E. Bong Street  
Fairchild AFB WA 99011

### SAMPLE LETTER



Dear [REDACTED]

The United States Air Force is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the bed-down of the KC-46A tanker aircraft. Based upon established operational and infrastructure factors, Fairchild Air Force Base (AFB) and Grand Forks AFB in North Dakota have recently been identified as reasonable alternatives for the first Main Operating Base (MOB 1) while McConnell AFB in Kansas is the preferred alternative to be MOB 1. However, no final basing decision will be made until the NEPA process has been completed.

With this letter, Fairchild Air Force Base invites the [REDACTED] Tribe to provide input regarding this NEPA analysis and to initiate consultation so you can express your comments, concerns, and suggestions. These consultations, conducted pursuant to Section 106 of the National Historic Preservation Act, 36 CFR Part 800, and Executive Order 13175, will provide an excellent opportunity to exchange information, ask questions, and advise Fairchild Air Force Base of any concerns or suggestions you may have with the potential basing of KC-46A aircraft here. Updated information about the proposed basing of the KC-46A can also be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The Air Force anticipates the area of potential effect for this action will be limited to the areas of construction, demolition, and renovation at each installation since the KC-46A would replace the existing and/or historical KC-135 operations at each considered alternative. The KC-46A would operate in existing airspace and the types of flight operations would mirror existing or historical KC-135 operations. The KC-46A would use existing air refueling tracks and fuel jettison areas, if necessary. The elevation of the current air refueling tracks for the KC-135 vary but are generally at elevations of 14,000 to 24,000 feet above ground level. Preliminary analysis indicates that noise levels from these operations would be similar to noise levels associated with existing KC-135 missions.

The KC-46A MOB 1 bed-down EIS will analyze the environmental impacts of the training, and flight operations of the new aircraft. It will also evaluate the personnel changes, new construction and use of existing facilities on-base. We expect the draft KC-46A MOB 1 bed-down EIS to be released in the fall of 2013 for public comment.

We request your assistance in identifying and evaluating whether there are any significant cultural resources in the area of potential effect, defined as the installation where operations will occur. Please utilize the questionnaire attached to indicate your preference(s) regarding any concerns and future involvement in this process.

For staff questions, comments, or input on the NEPA or NHPA Section 106 review and process, please contact Mr. Steve Selser, Fairchild AFB Cultural Resources Manager [steven.selser@us.af.mil](mailto:steven.selser@us.af.mil), (509) 247-8116.

Sincerely,

BRIAN M. NEWBERRY  
Colonel, USAF  
Commander

Attachment:  
Consultation Questionnaire

## A.4.2 Fairchild AFB NHPA Section 106 Tribal Consultation Letter (Continued)

F\_001\_C\_A

### SAMPLE

#### SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base  
Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

**Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to [REDACTED]@us.af.mil:**

\_\_\_\_ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

\_\_\_\_ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

\_\_\_\_ Meeting with the Air Force at a tribal facility.

\_\_\_\_ Communicating with the Air Force by scheduled teleconference.

\_\_\_\_ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

\_\_\_\_ Phone: \_\_\_\_\_

Please print email: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please mail response in provided postpaid envelope to:

[REDACTED]  
KC-46A FTU and MOB 1 EIS

Or, e-mail to: [REDACTED]

*A.4.2.1 Fairchild AFB NHPA Section 106 Tribal Consultation Responses*



### A.4.3 Grand Forks AFB NHPA Section 106 Tribal Consultation Letter

G\_001\_C\_A



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

G\_001\_C\_A

Colonel Paul E. Bauman  
Commander, 319th Air Base Wing  
460 Steen Blvd  
Grand Forks AFB ND 58205

JUL 29 2013

#### SAMPLE LETTER

Dear [REDACTED]

The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) bed-down of the KC-46A tanker aircraft. McConnell Air Force Base (AFB) in KS was selected as the preferred alternative for the MOB 1 mission and Grand Forks AFB, ND and Fairchild AFB, WA are listed as alternatives for the MOB 1 mission. Altus AFB is the preferred alternative for the FTU mission. A no-action alternative, where the KC-46A aircraft would not be located at any of these installations, will also be examined.

With this letter, Grand Forks AFB invites the [REDACTED] Tribe to provide input regarding this NEPA analysis, as well as on any National Historic Preservation Act (NHPA) Section 106 concerns with the proposed basing of KC-46A aircraft. Additional information on the bed-down and EIS process was included in an introductory project letter sent to you on March 29<sup>th</sup>, 2013. The associated attachments to that letter were the Federal notice of intent (NOI) and an informational brochure. A map with the proposed construction footprint is attached to this letter for your further review. Information is continuously updated about the proposed basing of the KC-46A and is available on a website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com) for your convenience.

A KC-46A mission at Grand Forks AFB would be in addition to the existing remotely piloted aircraft currently flying here. The Air Force anticipates the area of potential effect for this action will be limited to the areas of construction, demolition and renovation of existing structures to be retrofitted for the new aircraft. The KC-46A aircraft also would operate in existing airspace and the types of flight operations would mirror KC-135 operations previously stationed at Grand Forks AFB. The KC-46A would use existing air refueling tracks and fuel jettison areas, if necessary. The elevation of the historical air refueling tracks for the KC-135 vary but are generally at elevations of 14,000 to 24,000 feet above ground level. Preliminary analysis indicates that noise levels from these operations would be similar to noise levels associated with historical KC-135 missions.

#### SAMPLE LETTER

The KC-46A FTU and MOB 1 bed-down EIS will analyze the environmental impacts of the training, and flight operations of the new aircraft. It will also evaluate the personnel changes, new construction and use of existing facilities on-base. It is expected for the Draft KC-46A FTU and MOB 1 bed-down EIS to be released in the fall of 2013 for public comment.

We request your assistance in identifying and evaluating if there are any significant cultural resources in the area of potential effect, defined as the installation where operations will occur. Please utilize the consultation questionnaire attached to indicate your preference(s) regarding any concerns and future involvement in this process.

My staff will be contacting your office by telephone to discuss the KC-46A proposal and expected impacts. For staff questions, comments, or input on the NEPA or NHPA Section 106 review and process, please contact Ms. Kristen Rundquist, Grand Forks AFB Cultural Resources Manager, [kristen.rundquist@us.af.mil](mailto:kristen.rundquist@us.af.mil), 701-747-4774. I look forward to receiving any input you may have regarding this undertaking.

Sincerely,

PAUL E. BAUMAN, Colonel, USAF  
Commander

#### Attachments:

1. Construction Footprint Map
2. Consultation Questionnaire

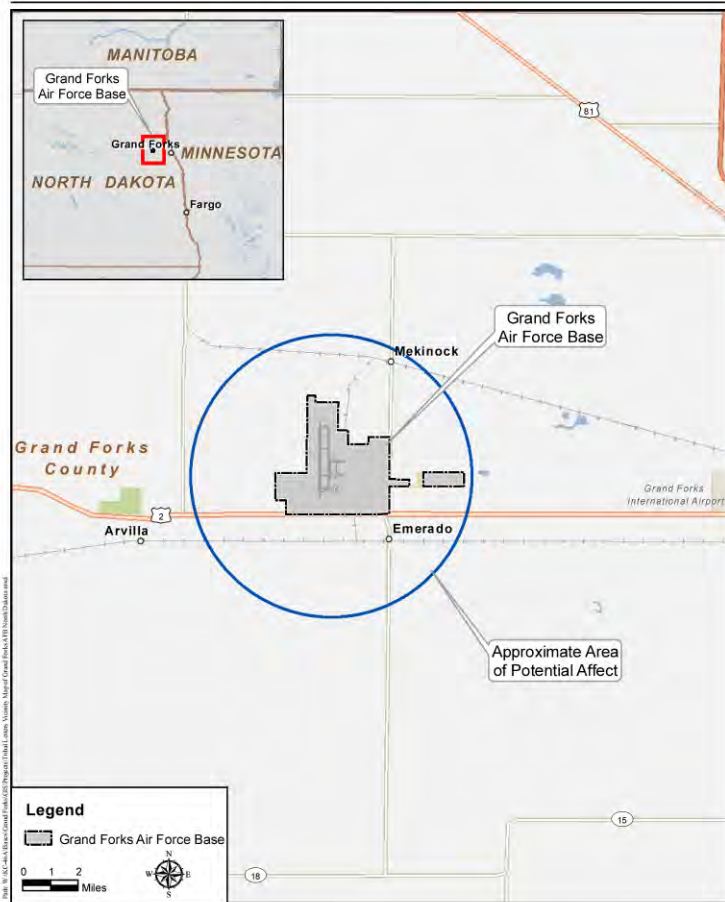
cc: Steve Vance, CRST Preservation Office

### A.4.3 Grand Forks AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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G\_001\_C\_A

KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



Vicinity Map of Grand Forks AFB, North Dakota

## SAMPLE

### SECTION 106 CONSULTATION QUESTIONNAIRE

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to [redacted]@us.af.mil:

☐ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☐ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☐ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☐ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

\_\_\_\_ Phone: \_\_\_\_\_

Please print email: \_\_\_\_\_

Signed: \_\_\_\_\_ Date: \_\_\_\_\_

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Please mail response in provided postpaid envelope to:

KC-46A FTU and MOB 1 EIS

Or, e-mail to: [redacted]

### A.4.3.1 Grand Forks AFB NHPA Section 106 Tribal Consultation Responses

G\_001\_C\_T-R1

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**Subject:** FW: RE Grand Forks AFB alternative KC46A EIS, and interest from THPO Cheyenne River Sioux Tribe regarding both NEPA and NHPA

G\_001\_C\_T-R1

-----Original Message-----

From: Steve Vance [<mailto:steve.vance@crst-nsn.gov>]  
Sent: Monday, August 12, 2013 5:06 PM  
To: RUNDQUIST, KRISTEN A GS-11 USAF AMC 319 CES/CEAN  
Subject: RE: Grand Forks AFB KC46A Tanker Beddown -- Environmental Impact Statement

Kristen Rundquist,

Section 106 Consultation Questionnaire:

The Cheyenne River Sioux Tribe (CRST) agrees that there are issues of concern associated with the proposed project and we wish to be included as a section 106 Consulting Party. We prefer meeting with the Air Force at a Tribal facility and communicating with the Air Force by scheduled teleconference.

We want to continue to receive project information by mail or email and participate in the public involvement process.

The reason for interest for CRST in the proposed KC-46A Formal Training Unit and First Main Operating Base Beddown EIS project, is that of adverse effects to Sacred Sites, Properties of Cultural and Religious Significance to Tribes, Traditional Cultural Properties, Cultural Resources, (above and below ground) etc., on past, present and future ancestral territories.

The history of this continent did not start with the landing of Columbus, as taught in American schools. The history here is that of the aboriginal peoples who continue to associate to significant landforms and resources "as far as the buffalo roamed". This would also include Oklahoma and Kansas.

Many of present military facilities have been established where Forts were erected to subdue the Native People and since then no effort has been made to identify cultural resources on those facilities. Only when expansion or improvements are anticipated do Federal Agencies contact or consult with Tribes. So the question is; "Has a Cultural Resource Survey been conducted by Tribes on the Grand Forks Air Force Base?" (or any of the other proposed facilities named for this project).

The Advisory Council on Historic Preservation (ACHP) has supported the integrating the Section 106 Process with NEPA. Where is the US Air Force on this process?

ACHP and the President of the United States also support the United Nations Declaration on the Rights of Indigenous Peoples. Is the US Air Force aware of this and do they also support the Declaration?

I could continue on with questions but what is presently happening in the Northern Plains in development, such as oil, uranium, rare elements, gas, etc., has caused major concerns for the Tribes on effects to our environment. I have been questioning the future quality of Land, Air, and Water. I haven't even commented on ownership of air space or visual affects yet.

I will submit this much for comment for starters and if you have any questions contact me either by telephone or email.

Respectfully

Steve Vance  
Tribal Historic Preservation Officer  
Cheyenne River Sioux Tribe  
Cultural Preservation Office  
P.O. Box 590  
98 S. Willow St.  
Eagle Butte, SD 57625  
(605) 964-7553  
(605) 964-7554  
(605) 964-7552 FAX  
(605) 200-0650  
[steve.vance@crst-nsn.gov](mailto:steve.vance@crst-nsn.gov)  
[cpthpo@lakotanetwork.com](mailto:cpthpo@lakotanetwork.com)

-----Original Message-----

From: RUNDQUIST, KRISTEN A GS-11 USAF AMC 319 CES/CEAN [<mailto:kristen.rundquist@us.af.mil>]  
Sent: Monday, August 12, 2013 8:41 AM  
To: Steve Vance  
Subject: Grand Forks AFB KC46A Tanker Beddown -- Environmental Impact Statement

Dear Mr. Steve Vance,

Thank you for speaking with me today. Please find attached the letter I was referencing on the telephone for the KC46A Tanker Aircraft Beddown for the Air Force.

Referenced in the letter is a web site (<http://www.kc-46a-beddown.com>) having all the up-to-date information about our project. There is also a map and questionnaire attached with the letter. We kindly ask you to fill out the questionnaire and return to me or respond with whatever format to your liking.

If you have any questions, I am happy to help you.

Thank you for your time,  
Kristen Rundquist, Cultural Resources Manager  
319 CES/CEAN  
525 Tuskegee Airmen Blvd  
Grand Forks AFB, ND 58205

701-747-4774

A.4.3.1 Grand Forks AFB NHPA Section 106 Tribal Consultation Responses (Continued)

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LEECH LAKE BAND OF OJIBWE

Carri Jones, Chairwoman  
Donald Finn, Secretary-Treasurer  
Robbie Howe, District I Representative  
Steve White, District II Representative  
LeRoy Staples Fairbanks III, District III Representative

April 5, 2013

United States Air Force  
AFCEC/CZN Midwest Office  
Attn: Ms. Jean Reynolds  
507 Symington Drive  
Scott AFB, IL 62225-5022

RE: **Proposed Formal Training Unit and first Main Operating Base beddown of the KC-46A tanker aircraft**  
Altus AFB, Oklahoma  
Fairchild AFB, Washington  
Grand Forks AFB, North Dakota  
McConnell AFB, Kansas  
**LLTHPO No. 13-070-NCRI**

Dear Ms. Reynolds:

Thank you for the opportunity to comment on the above-referenced project. It has been reviewed pursuant to the responsibilities given the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992 and the Procedures of the Advisory Council on Historic Preservation (38CFR800).

**I have reviewed the documentation; after careful consideration of our records, I have determined that the Leech Lake Band of Ojibwe does not have any known recorded sites of religious or cultural importance in these areas.**

*Should any human remains or suspected human remains be encountered, all work shall cease and the following personnel should be notified immediately in this order: County Sheriff's Office and Office of the State Archaeologist. If any human remains or culturally affiliated objects are inadvertently discovered this will prompt the process to which the Band will become informed.*

Please note: The above determination does not "exempt" future projects from Section 106 review. In the event of any other tribe notifying us of concerns for a specific project, we may re-enter into the consultation process.

You may contact me at [REDACTED] if you have questions regarding our review of these projects. Please refer to the LL-THPO Number as stated above in all correspondence with this project.

Respectfully submitted,

Gina M. Lemon  
Tribal Historic Preservation Officer



MILLE LACS BAND OF OJIBWE

Executive Branch of Tribal Government

April 10, 2013

J. Dale Clark, Chief, Air Force NEPA Center  
Department Of The Air Force

Re: Section 106 Consultations and Tribal Review NHPA: US Department of the Air Force: MLBO DNR THPO 13-0402-02: Environmental Impact Statement to assess the potential environmental consequences associated with the Formal Training Unit and First Main Operating Base beddown of the KC-46A tanker aircraft included in March 26, 2013 Federal Register.

Dear Chief Clark,

Thank you for the opportunity to comment on the above referenced project. It has been reviewed pursuant to the responsibilities given to the Tribal Historic Preservation Officer (THPO) by the National Historic Preservation Act of 1966, as amended in 1992 and the Procedures of the Advisory Council on Historic Preservation (38CFR800).

I have reviewed the documentation; after careful consideration of our records, I have determined that the Mille Lacs Band of Ojibwe (DNR/E) does not have any known recorded sites of religious or cultural importance in these areas. the Mille Lacs Band of Ojibwe is aware of your project and can review the project EIS on the web site at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

Please note: The above determination does not "exempt" future projects from Section 106 Review. In the event any other tribe notifying us of concerns for a specific project, we may reenter into the consultation process.

You may contact my staff at [REDACTED] if you have questions regarding our review of these projects. Please refer to the MLB-THPO Number as stated above in all correspondence with this project.

Respectfully Submitted,

*Bradley Kalk*  
Bradley Kalk  
Commissioner of Natural Resources

DISTRICT I  
[REDACTED]  
DISTRICT II  
[REDACTED]  
DISTRICT IIIA  
[REDACTED]  
DISTRICT III  
[REDACTED]

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A.4.3.1 Grand Forks AFB NHPA Section 106 Tribal Consultation Responses (Continued)

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G\_006\_T-R1



**T**RIBAL HISTORIC PRESERVATION OFFICE  
**S**TANDING ROCK SIOUX TRIBE  
 Administrative Service Center  
 North Standing Rock Avenue

May 27, 2013

Ms. Jean Reynolds, United States Air Force  
 AFCEC/CZN Midwest Office  
 507 Symington Drive,  
 Scott AFB, IL 62225-5022

13-117

Thank you for your letter of March 29, 2013 requesting scoping comments regarding the selection of a Base for the beddown of the KC-46A tanker aircraft. It is our suggestion that in your analysis you take into account that noise associated with training missions has the potential to disrupt fasting and prayers of our Native American traditional practitioners.

Thank you for your consideration.

Sincerely,

Mary S. Wilson  
 Section 106 Coordinator  
 Tribal Historic Preservation Office

**SECTION 106 CONSULTATION QUESTIONNAIRE**

**Project Name:** KC-46A Formal Training Unit and First Main Operating Base Beddown Environmental Impact Statement (KC-46A FTU and MOB 1 EIS)

Please check the appropriate response(s) from the list below and use the back of this form or additional sheets if you wish to make comments. You may also respond via e-mail to kristen.rundquist@us.af.mil:

☐ We have no traditional religious, cultural properties, or other interests that may be affected by the proposed project and further consultation is not required.

☐ There are or may be issues of concern associated with this proposed project and we wish to be included as a Section 106 Consulting Party. We prefer:

☐ Meeting with the Air Force at a tribal facility.

☐ Communicating with the Air Force by scheduled teleconference.

☒ We want to continue to receive project information by mail and participate in the public involvement process.

Name of designated contact for this proposed project:

Carol Robertson, ACTING THPO Phone: (605) 997-3891 Ext. 1226

Please print email: carol.robertson@fst.org

Signed: Carol Robertson Date: 8/6/13

Please explain your reason for interest in the KC-46A FTU and MOB 1 EIS's Potential Effects on Cultural Resources:

May have historical significance for Tube landowners.

Please mail response to:

Colonel Paul E. Bauman  
 Commander, 319th Air Base Wing  
 460 Steen Blvd  
 Grand Forks AFB ND 58205

Or, e-mail to: kristen.rundquist@us.af.mil

A.4.3.2 Grand Forks AFB NHPA Section 106 Tribal Consultation Letter (Continued Consultation)



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

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20 Dec 13

Colonel Christopher R. Mann  
Vice Commander, 319th Air Base Wing  
460 Steen Blvd  
Grand Forks AFB, ND 58205

Kevin Keckler, Chairman  
Cheyenne River Sioux Tribe  
PO Box 590  
Eagle Butte, SD 57625

Dear Chairman Keckler,

Thank you for hosting a meeting with Grand Forks Air Force Base (GFAFB) on Dec 5th, rescheduled from Dec 4th due to the inclement weather which also impacted the full availability of the Cheyenne River Sioux Tribal (CRST) Council. I sincerely appreciate your hospitality and the opportunity to discuss the proposed KC-46A Aircraft Beddown project and the Enhanced Use Lease (EUL) of 217 acres on base to Grand Forks County for development of a mixed-use business and aviation park.

During our meeting, tribal members raised concerns that noise from KC-46A overflights might adversely affect activities on CRST land. Our Environmental Impact Statement includes an analysis of noise impacts, taking into account the type of aircraft used, speed and altitude of the aircraft, and frequency of flights. Noise exposure of concern is limited to the vicinity of GFAFB due to landings and takeoffs from the airfield. KC-46A operations away from the airfield use long-established tanker routes throughout the continental U.S. No low-level flights would occur over CRST land. The KC-46A aircraft would conduct refueling at altitudes above 18,000 feet mean sea level. Potential KC-46A overflights would be sporadic and infrequent and operate at altitudes similar to civil passenger airlines, producing similar relatively low amounts of noise at ground level.

We also acknowledge and understand your concern that cultural resources on GFAFB might be affected by construction of buildings associated with the EUL proposal or the KC-46A beddown. Earlier this month, Kristen Rundquist (our Cultural Resources Manager) discussed with Steve Vance (CRST THPO) the tribe's concerns about these projects, particularly the possibility that properties of religious and cultural significance may be present on undeveloped portions of the 217 acres to be used for the EUL project. As you know, neither our literature search nor our 1996 Intensive Archaeological Inventory of all installation undisturbed landscapes found any indication of archeological sites or locations eligible for the National Register of Historic Places. Neither the surveyors nor tribes consulted during the survey found indications of Native American burial grounds or other culturally sensitive areas on GFAFB. Copies of this survey have been provided for your review, and we would be glad to provide additional copies if needed. Based on the previous investigation, we have determined that neither proposal will have

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an adverse effect on archeological or historic resources identified in our 1996 Inventory. However, in response to Mr. Vance's expressed concerns, we would appreciate your assistance in identifying any historic properties to which the tribe attaches religious and cultural significance. We had hoped this consultation would take place during the Dec 5th meeting, but since there was not a quorum of tribal representatives present, no decisions were reached.

We want to accommodate the tribe's request for further consultation and we look forward to building a long-term collaborative relationship with you. I invite you and Mr. Vance, or other tribal representative, to visit the base as soon as possible to accomplish the identification consultation. A meeting within the next thirty days would help us ensure that any information you provide could be fully considered. Please let us know when you might desire a trip to GFAFB and our Cultural Resources Manager, Ms. Kristen Rundquist (as below), will coordinate with your staff for travel arrangements.

My action officer for any of the matters mentioned in this letter is Ms. Rundquist, kristen.rundquist@us.af.mil, telephone 701-747-4774. Please ask Mr. Vance to contact her and set an agenda for our next meeting. Again, please accept my sincere appreciation for the time you and your staff spent with us on Dec 5th.

Sincerely,

CHRISTOPHER R. MANN, Colonel, USAF  
Vice Commander

*A.4.3.2 Grand Forks AFB NHPA Section 106 Tribal Consultation Letter (Continued Consultation)*

G\_025\_C\_A

From: RUNDQUIST, KRISTEN A GS-11 USAF AMC 319 CES/CEIEC  
[mailto:kristen.rundquist@us.af.mil]  
Sent: Friday, January 17, 2014 4:00 PM  
To: [Stevevance.crstpreservation@outlook.com](mailto:Stevevance.crstpreservation@outlook.com)  
Subject: Grand Forks AFB - Invitation to Visit - KC46A & EUL projects  
Importance: High

Hello Mr. Vance,

Thanks for speaking with me on Tues. Jan 14th regarding the attached letter to the CRST. The CRST received a hard copy of this letter in the mail on Jan 2nd.

During our conversation, I asked you if the tribe was going to accept the invitation to visit the Grand Forks AFB as noted in the letter.

I understood that you would like to visit the base regarding the 217 acre EUL for the mixed-business and aviation park. However, you noted that you would leave official response on the KC46-A project to the Tribal Council as you felt it wasn't really a THPO issue.

We considered scheduling your visit, and you mentioned that snow cover is not ideal for the purpose of your site visit on the 217 acres.

I further asked if you had any guidance about what the council thought of our projects, since the subcommittee Walakota met Dec 23 and you had Tribal Council again last week. As I understood the conversation, you hadn't received much guidance, if any, on a course of action for Grand Forks AFB projects.

Lastly, I requested that you please provide a written response on your acceptance of the invitation to visit the base for the EUL 217 acre project if that is really what the CRST wants.

We are of course, anxious to wrap up our NEPA process and would like to include input from the CRST as appropriate.

Thank you so much for your time, I do appreciate it.

v/r,  
Kristen Rundquist  
Natural/Cultural Resources

## A.4.4 McConnell AFB NHPA Section 106 Tribal Consultation Letter



DEPARTMENT OF THE AIR FORCE  
22D AIR REFUELING WING (AMC)  
MCCONNELL AIR FORCE BASE KANSAS

M\_001\_C\_A

Colonel Joel D. Jackson  
Commander, 22d Air Refueling Wing  
57837 Coffeyville Street, Suite 135  
McConnell AFB KS 67221-3504

SAMPLE LETTER



Dear [REDACTED]

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) at McConnell Air Force Base (AFB), Kansas, as required by the National Environmental Policy Act (NEPA). This EIS will assess the potential environmental consequences associated with bringing the Formal Training Unit (FTU) or the First Main Operating Base (MOB 1) beddown of the KC-46A tanker aircraft to McConnell AFB. Along with analyzing the environmental impacts of the training and flight operations of the new aircraft, the EIS will also evaluate the personnel changes, new construction, and use of existing facilities on-base. The Air Force expects the Draft KC-46A FTU and MOB 1 beddown EIS available for public comment in the Fall of 2013.

McConnell Air Force Base invites the [REDACTED] to provide input regarding this NEPA analysis and, if desired, initiate consultation pursuant to Section 106 of the National Historic Preservation Act, 36 CFR Part 800, and Executive Order 13175, Consultation and Coordination with Indian Tribal Governments. Previously, the [REDACTED] has not identified any locations of, or impacts to, areas of traditional use or cultural importance underlying the airspace as currently used by McConnell. Nevertheless, consultation provides an excellent opportunity to exchange information, ask questions, and advise McConnell Air Force Base of any concerns or suggestions you may have with the potential basing of KC-46A aircraft here. To help identify potential concerns, the attachments to this letter contain information on the beddown, and the following paragraph provides some general information.

For the FTU alternative, the KC-46A will augment the KC-135 aircraft currently based at McConnell AFB. For the MOB 1 alternative, the KC-46A will replace the KC-135 currently based at McConnell AFB. For both alternatives, the KC-46A will operate in existing airspace and the types of flight operations will mirror existing KC-135 operations. The KC-46A will use existing air refueling tracks and fuel jettison areas, if necessary. The elevation of the current air refueling tracks for the KC-135 vary but are generally at elevations of 14,000 to 24,000 feet above ground level. Preliminary analysis indicates noise levels will be similar to levels associated with the KC-135 missions. Therefore, the Air Force anticipates the area of potential effect for this action to be limited to the areas of construction, demolition, and renovation at each

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

SAMPLE LETTER

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2

installation. For the FTU mission, the area of potential effect also includes proposed auxiliary fields listed in attachment 2. The Air Force updates information about the proposed basing of the KC-46A on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

My staff will contact your office by telephone to discuss the KC-46A proposal and expected impacts. For staff questions, comments, or input on the NEPA or NHPA Section 106 review and process, please contact Ms. Tina Seemayer, McConnell AFB Cultural Resources Manager, [tina.seemayer@us.af.mil](mailto:tina.seemayer@us.af.mil), (316) 759-4445.

Please take this opportunity to respond with your preferences selected from or added to the list on the endorsement page, Attachment 4. I look forward to receiving any input you may have regarding this endeavor.

Sincerely

JOEL D. JACKSON, Colonel, USAF  
Commander

5 Attachments

1. Vicinity Map of McConnell AFB
2. Auxiliary Field Locations
3. KC-46A FTU and MOB 1 Brochure
4. Response Endorsement and Preferences
5. Stamped, addressed return envelope

Cc:

Pat Gwin, Tribal Historic Preservation Office

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A.4-19

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A.4-19

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*March 2014*

KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



## A.4.4 McConnell AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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The U.S. Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences of basing and operating the KC-46A tanker aircraft, associated infrastructure and manpower to establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). In order to effectively define the full range of issues to be evaluated in the EIS, the Air Force is holding public scoping meetings to determine the EIS scope (i.e. what will be covered and in what detail) by soliciting comments from interested state and federal agencies and interested members of the public.

#### The National Environmental Policy Act (NEPA)

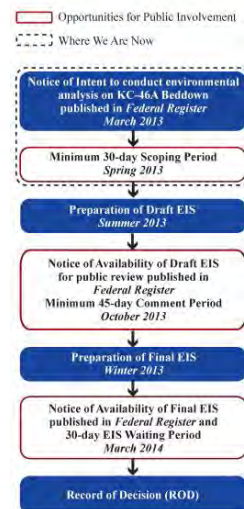
NEPA is our national mandate for making informed decisions while considering environmental impacts. When Federal agencies propose projects having the potential to significantly impact the environment, NEPA requires the following process be undertaken as part of planning before final decisions are made:

- Evaluation and consideration of potential environmental consequences for proposals that may significantly impact the environment, and
- Consideration of public and government agency comments.

Where the potential for significant environmental impacts exists, this evaluation is presented in an EIS, which:

- Identifies and describes the affected environment;
- Evaluates the potential environmental consequences from a range of reasonable alternatives; and
- Identifies environmental permits and specific mitigation measures that could avoid, minimize, or reduce potential environment consequences.

#### The EIS Timeline



#### Notice of Intent and Scoping

The EIS begins with an NOI, which is published in the *Federal Register* to announce the Air Force's intent to prepare an EIS on the KC-46A FTU and MOB 1 beddown proposed action and alternatives. The NOI is the beginning of the public scoping process, including community scoping meetings, to provide the public and government agencies and entities time to review the proposed action and alternatives.

#### Proposed Action: FTU and MOB 1 KC-46A Tanker Beddown

The KC-46A EIS will evaluate the potential environmental consequences of two different actions:

1. Beddown of up to eight KC-46A tanker aircraft for one squadron at one base for the FTU; and
2. Beddown of 36 KC-46A aircraft for three squadrons at one base for the MOB 1.

#### The proposed FTU alternative locations are:

- Altus Air Force Base (AFB), Oklahoma
- McConnell AFB, Kansas

The FTU Mission would require the use of various auxiliary airfields in Oklahoma, Texas and Kansas.

#### The proposed MOB 1 alternative locations are:

- Altus AFB, Oklahoma
- Fairchild AFB, Washington
- Grand Forks AFB, North Dakota
- McConnell AFB, Kansas

*The Air Force is in the early stages of the EIS Process and no decision has been made as to final KC-46A FTU and MOB 1 beddown location(s).*

Altus AFB and McConnell AFB are being considered for both the FTU or MOB 1 missions. No base would be selected for both the FTU and MOB 1 missions.



U.S. Map of FTU and MOB 1 Candidate Bases

#### No-Action Alternative

Under the No-Action alternative, basing of the KC-46A aircraft would not occur at this time. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location, which will provide a baseline for decision-makers.

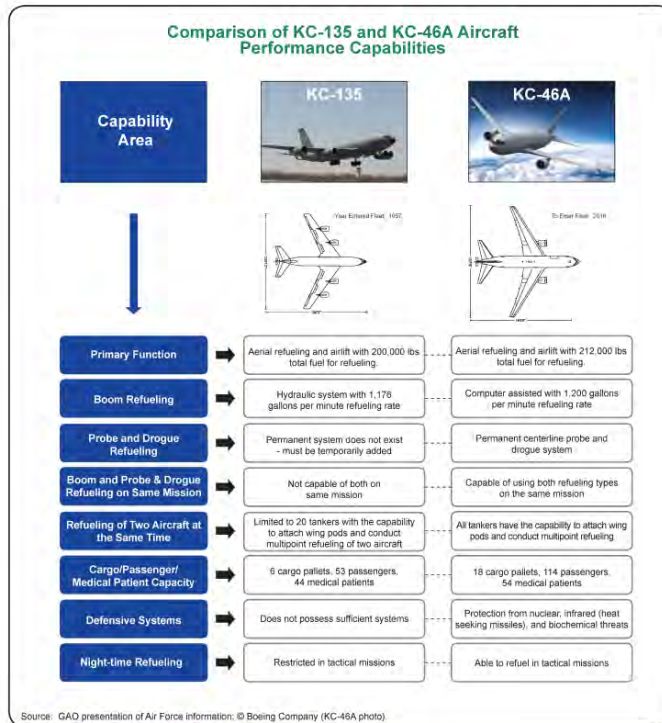
## A.4.4 McConnell AFB NHPA Section 106 Tribal Consultation Letter (Continued)

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### Purpose and Need: Tanker Modernization

The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training.

The purpose of the KC-46A beddown is to provide locations for training and flight operations. The KC-46A tankers are needed to support a high-threat, multi-role warfighting capability to Commanders worldwide. Trained pilots and personnel must be available to meet necessary KC-46A scheduled inventory replenishment dates as older KC-135 tanker aircraft are withdrawn from the inventory.



3

### Environmental Resources

The Air Force understands the potential for the KC-46A FTU and MOB 1 beddown to affect environmental resources. As part of the EIS, the Air Force will analyze potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the inclusion of KC-46A training and flight operation activities. The environmental resource areas, to the right, are currently under consideration in the EIS.

#### Please take this opportunity to:

- ☒ Learn about the proposal,
- ☒ Identify community-specific issues,
- ☒ Make sure you are included on our mailing list.



### Public Scoping Meetings

**5:00 p.m. - 8:00 p.m.**

**April 9, 2013**

Altus Air Force Base  
Southwest Technology Center  
711 W. Tamarack Rd., Altus, OK

**April 11, 2013**

McConnell Air Force Base  
Eugene M. Hughes Metro Complex Rm. 180  
5015 E. 29th St N., Wichita, KS

**April 16, 2013**

Fairchild Air Force Base  
Lincoln Center, 1316 North Lincoln Street  
Spokane, WA

**April 18, 2013**

Grand Forks Air Force Base  
Ramada Inn, 1205 North 43rd Street  
Grand Forks, ND

### Environmental Resource Areas include:

#### Airspace Operations

- Airspace
- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety

#### Natural Resources

- Geology and Soils
- Surface Water and Groundwater
- Wetlands and Floodplains
- Biological Resources

#### Cultural Resources

- Archaeological, Architectural, and Traditional Resources

#### Human Resources

- Land Use
- Recreation
- Socioeconomics
- Environmental Justice and Protection of Children

#### Community Infrastructure

- Infrastructure (utilities and public services)
- Hazardous Materials and Waste
- Transportation



### How to Submit Comments

Submit comments electronically at  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)  
or by mail before May 17, 2013 to:

Ms. Jean Reynolds  
U.S. Air Force  
AFCEC/CZN Midwest Office  
507 Symington Drive  
Scott AFB, IL 62225-5022

4

*A.4.4.1 McConnell AFB NHPA Section 106 Tribal Consultation Response*

#/



M\_notification-iicep\_C\_T-R1

**TRIBAL HISTORIC PRESERVATION OFFICE**

Date: May 28, 2013

File: 1213-1155KS/OK-4

RE: USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas

USAF, AFCEC/CZN Midwest Office  
Jean Reynolds  
507 Symington Drive  
Scott AFB, IL 62225-5022

Dear Ms. Reynolds,

The Osage Nation Historic Preservation Office has received notification and accompanying information for the proposed project listed as USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas. **The Osage Nation requests a copy of the Draft Environmental Impact Statement and any associated cultural resource survey reports.**

In accordance with the National Historic Preservation Act, (NHPA) [16 U.S.C. 470 §§ 470-470w-6] 1966, undertakings subject to the review process are referred to in S101 (d)(6)(A), which clarifies that historic properties may have religious and cultural significance to Indian tribes. Additionally, Section 106 of NHPA requires Federal agencies to consider the effects of their actions on historic properties (36 CFR Part 800) as does the National Environmental Policy Act (43 U.S.C. 4321 and 4331-35 and 40 CFR 1501.7(a) of 1969).

The Osage Nation has a vital interest in protecting its historic and ancestral cultural resources. **The Osage Nation anticipates reviewing and commenting on the planned Environmental Impact Statement and any associated cultural resource survey reports for the proposed USAF Formal Training Unit and first Main Operating Base beddown of the KC-46A Tanker Aircraft at Altus AFB in Oklahoma and McConnell AFB in Kansas.**

Should you have any questions or need any additional information please feel free to contact me at the number listed below. Thank you for consulting with the Osage Nation on this matter.

  
James Munkres  
Archaeologist I

F-131

## A.5 NATIONAL HISTORIC PRESERVATION ACT (NHPA) SECTION 106 STATE HISTORIC PRESERVATION OFFICE (SHPO) CONSULTATION

### A.5.1 Altus AFB NHPA Section 106 SHPO Consultation Letter

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DEPARTMENT OF THE AIR FORCE  
97TH AIR MOBILITY WING  
ALTUS AIR FORCE BASE OKLAHOMA

26 Jun 13

Charles R. Butchee  
Chief, Asset Management Flight  
97th Civil Engineering Squadron  
401 L Ave  
Altus AFB OK 73523-5138

**Melvena Heisch**  
Deputy State Historic Preservation Officer  
Oklahoma Historical Society, Oklahoma History Center  
800 Nazih Zuhdi Drive  
Oklahoma City, OK 73105

Dear Ms. Heisch

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. As you know from our letter dated 29 March 2013, Altus Air Force Base (AFB) is one of four installations proposed for the MOB 1 mission. Additionally, Altus AFB is the Air Force's preferred alternative for the FTU mission.

Basing the aircraft at Altus AFB would require the construction and renovation of facilities to accommodate the new personnel and aircraft associated with the mission. The attached table (atch 1) and project maps (attachments 2, 3 and 4) identifies specific facilities that might be affected by this project.

In compliance with the National Historic Preservation Act (NHPA) and 36CFR800, Altus AFB, requests concurrence with the Area of Potential Effect (APE) as defined below and in Attachments 2, 3 and 4, and with a finding of no adverse impacts to historic properties. Altus AFB previously completed an inventory of its historic properties, in compliance with Section 110 of NHPA. The only potentially eligible facility within the APE is Building 285. Renovations to Building 285 would not have an adverse impact on the historic integrity of this facility ( Atch 5 ). The Criteria of Effect found in 36CFR800.11(e) has been applied and supports the determination that this undertaking will have no adverse effect on historic properties. The following documentation as detailed in Section 800.11(d) is attached for your review, and a copy of this material has been sent to the Oklahoma Archaeological Survey, as well.

- A description of the KC-46A project (see above)
- A delineation of the APE (Attachments 2, 3, and 4)
- A summary of the efforts made to identify historic properties in the project's APE, including, as appropriate, efforts to seek information pursuant to Section 800.4(b), identification of historic properties (See facilities list, Attachment 1).

- The basis for determining that no historic properties are present or affected (Attachments 1, 2, 3 and 4).
- The basis for determining a finding of no adverse impacts (Attachment 5)

Please review the material enclosed and contact Mr. James Bellon, [james.bellon@us.af.mil](mailto:james.bellon@us.af.mil), (580) 481-7606 if you have any questions. If we do not hear from you within 30 days after you receive this letter, we will assume concurrence with our finding of no adverse effect..

Sincerely,

Charles R. Butchee, GS-13, DAF  
Chief, Asset Management Flight  
97th Civil Engineer Squadron

Cc: Oklahoma Archeological Survey, University of Oklahoma, 111 East Chesapeake, Building #134, Norman, OK 73019-0575

## A.5.1 Altus AFB NHPA Section 106 SHPO Consultation Letter (Continued)

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Facilities and Infrastructure Projects for the KC-46A MOB 1 Beddown at Altus AFB

Project	Status	Year Constructed
<b>Demolition</b>		
Building 82	Not-Eligible*	1955
Building 171	Not-Eligible*	1984
Building 551	Not-Eligible**	1991
Building 554	Not-Eligible**	1991
Building 557	Not-Eligible**	1991
Building 563	Not-Eligible**	1991
Building 564	Not-Eligible**	1991
Building 565	Not-Eligible**	1991
Ramp Area	Not-Eligible**	NA
<b>Renovation</b>		
Renovate Taxiway G and Reconstruct K-1	Not-Eligible**	NA
Repair concrete Overrun	Not-Eligible**	NA
Building 87, Wing HQ (Ops Group, ANG and AFRC)	Not-Eligible*	1986
Building 170, Aircraft parts storage/contractor supplies	Not-Eligible*	1972
Building 285, construct interior wall and expand hydraulic shop	Eligible	1956
<b>New Construction</b>		
Ramp area and Aerospace Ground Equipment (AGE) apron	NA	NA
Install Box Culvert in existing irrigation canal	NA	NA
Refueling truck parking yard	NA	NA
Hangar Row Road	NA	NA
Squadrons Operations Facility with Aircraft Maintenance Unit (3 buildings)	NA	NA
Maintenance Hangar with AME (2-bay)	NA	NA
Fuel Cell Hangar	NA	NA
Maintenance hangar (2-bay)	NA	NA
Install ramp lighting	NA	NA
Maintenance Training Facility (MTF)	NA	NA
Fuel tanks, pumps, hydrant system	NA	NA
Fuselage Training (FuT) Facility	NA	NA
Weapons System Trainer (WST)	NA	NA
Two Dormitories (96 rooms)	NA	NA
Visiting Officers Quarters	NA	NA
<b>Additions/Alterations</b>		
Building 369, Add vault	Not-Eligible*	1952
Building 156, Gym addition	Not-Eligible*	1956

A\_018\_C\_A

Facilities and Infrastructure Projects for the KC-46A FTU Beddown at Altus AFB

Project	Status	Year Constructed
<b>Demolition</b>		
Building 170 (to make room for new FuT Facility)	Not-Eligible	1972
<b>Renovation</b>		
Building 87, Group Headquarters and Mission Training	Not-Eligible	1986
Building 394, Contractor Supply Storage	Not-Eligible	1955
<b>New Construction</b>		
Flight Training Center	NA	NA
Fuselage Trainer Facility	NA	NA
Hydrant pit (one pit added to existing system)	NA	NA
<b>Additions/Alterations</b>		
Building 193, Squadron Operations/Aircraft Maintenance Unit		1987
Building 518, Tail enclosure and fuel cell expansion		1971
Building 285, Tail enclosure and tool crib expansion	Eligible	1956

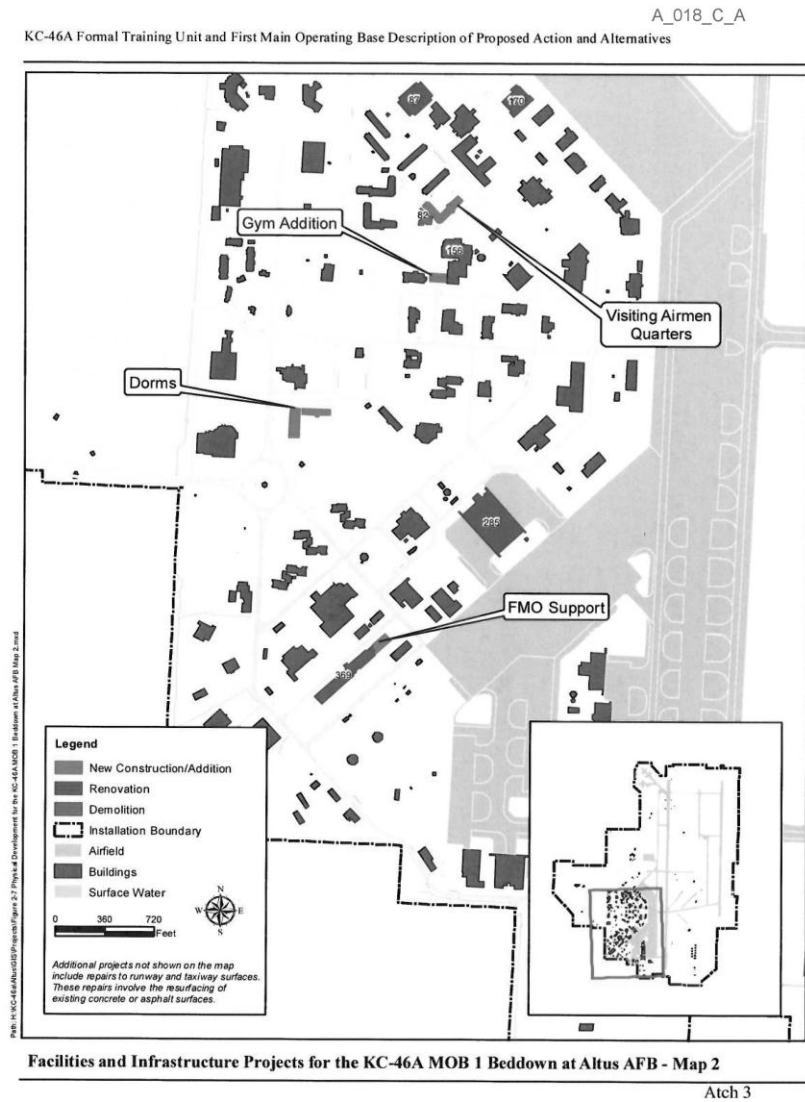
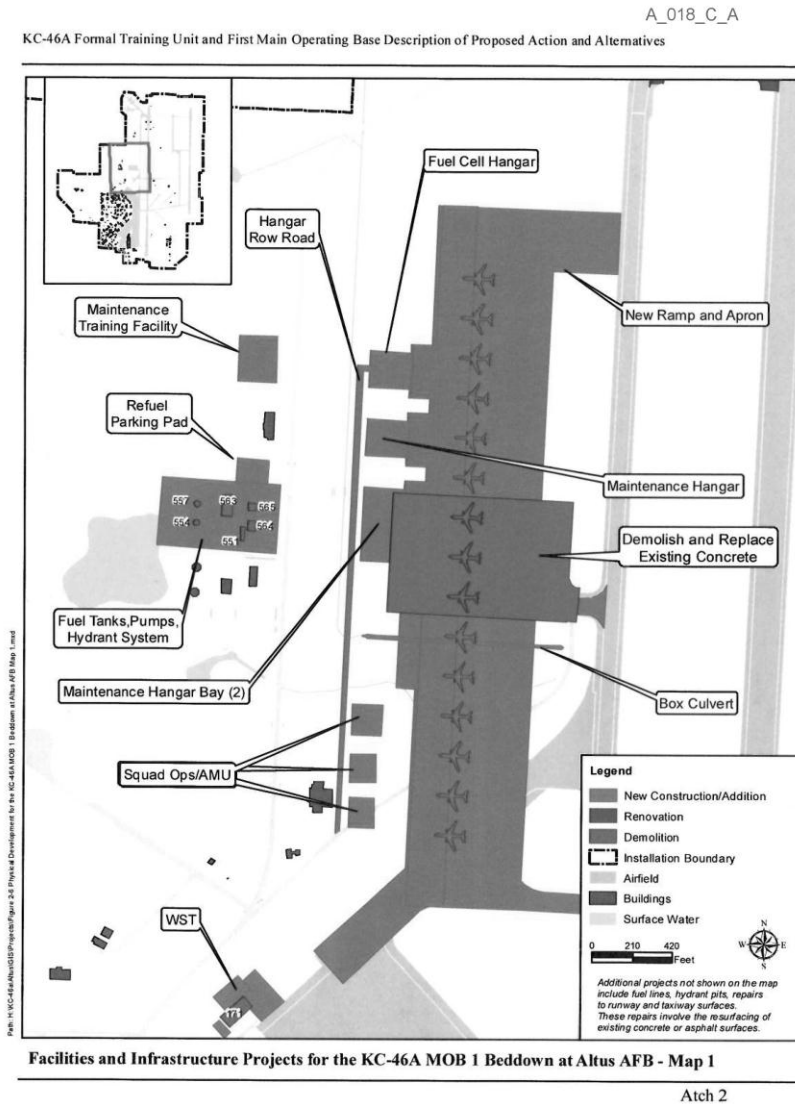
\* Not Eligible based on pending results of Section 110 Survey results

\*\* Not Eligible based on the recent construction dates and the lack of significant cultural context

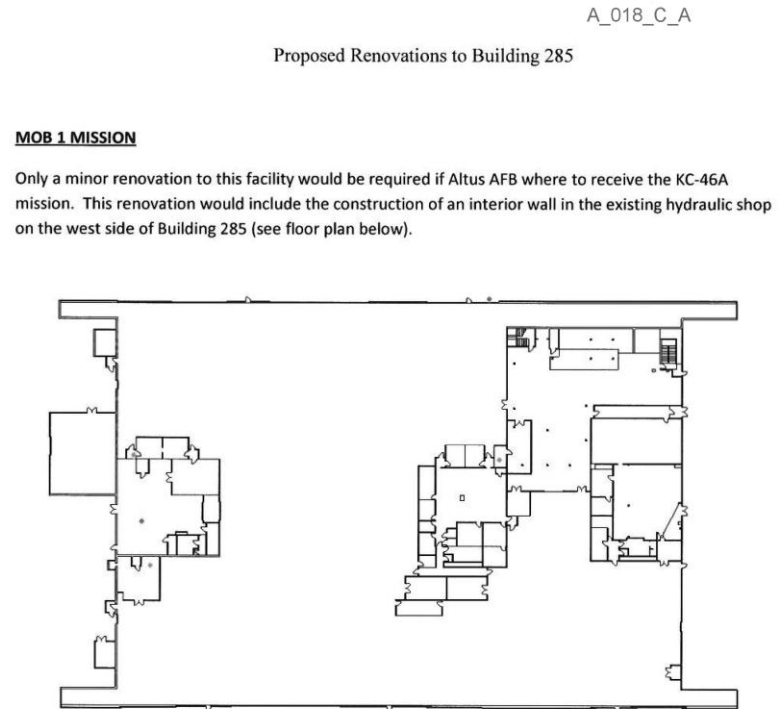
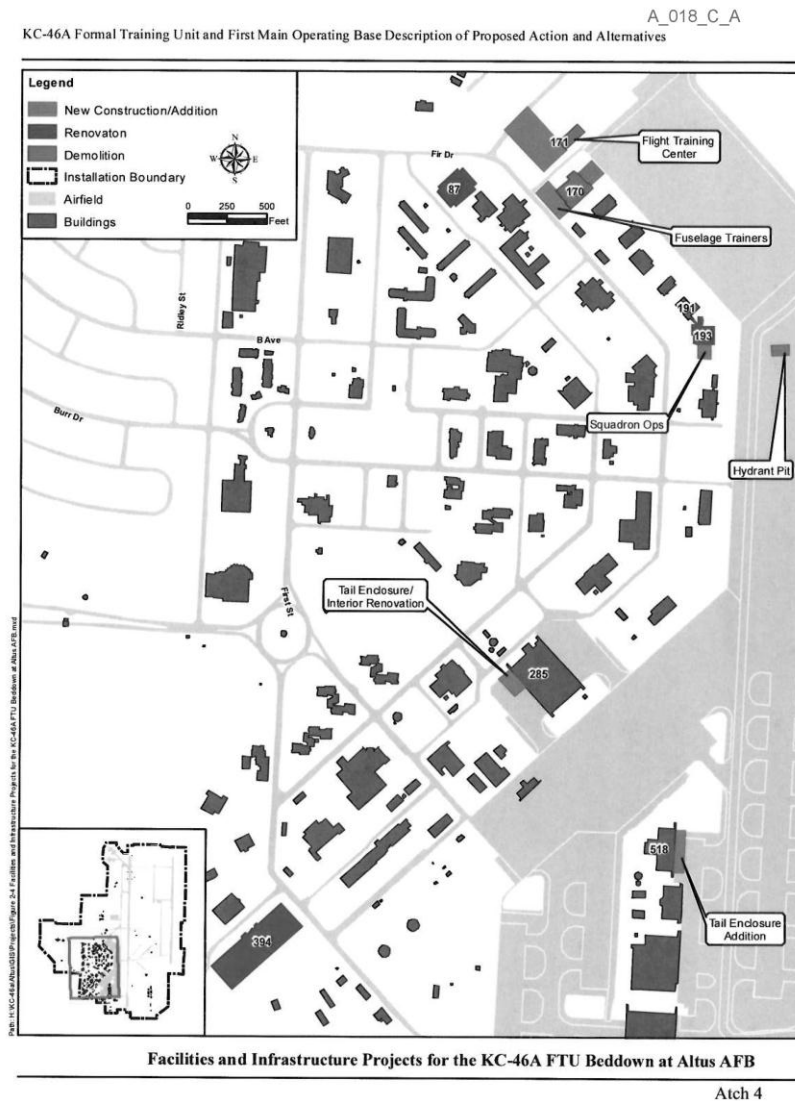
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## A.5.1 Altus AFB NHPA Section 106 SHPO Consultation Letter (Continued)



## A.5.1 Altus AFB NHPA Section 106 SHPO Consultation Letter (Continued)

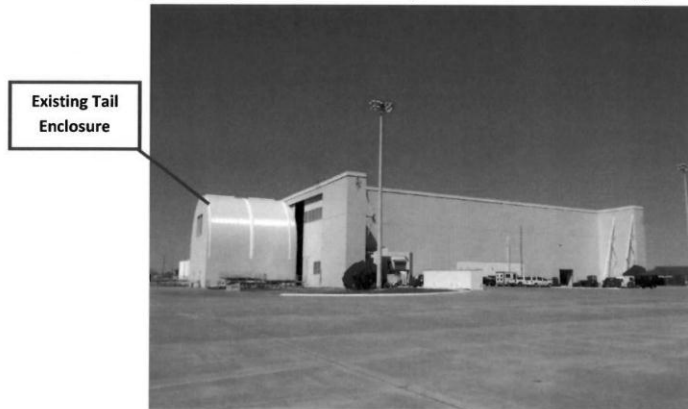
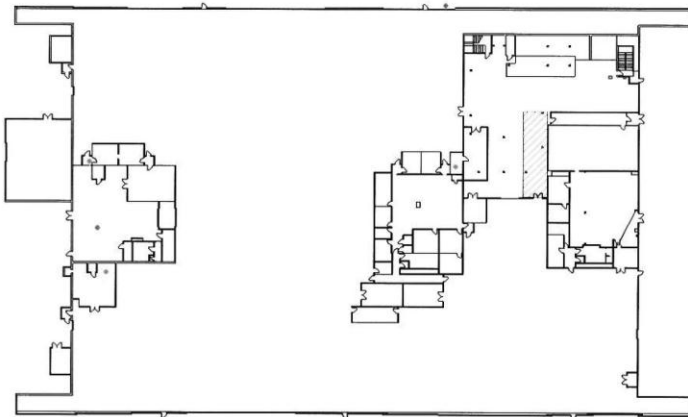


### A.5.1 Altus AFB NHPA Section 106 SHPO Consultation Letter (Continued)

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#### FTU MISSION

Should Altus FTU receive the FTU mission the following renovations would be required for Hangar 285. The renovations would consist of the construction of a 1,200 square foot storage area (see hatched area below). The addition of a removable, roll away tail enclosure is also proposed for the facility. This tail enclosure would be slightly larger than the existing tail enclosure currently in use at the facility (see photograph below). These renovations would not change the historic integrity of the facility and would contribute to the facilities functioning as an active aircraft hangar.



Atch 5

*A.5.1.1 Altus AFB NHPA Section 106 SHPO Consultation Response*

A\_018\_C\_A-R1



**Oklahoma Historical Society**  
**State Historic Preservation Office**

*Founded May 27, 1893*

Oklahoma History Center • 800 Nazih Zuhdi Drive • Oklahoma City, OK 73105-7917  
(405) 521-6249 • Fax (405) 522-0816 • [www.okhistory.org/shpo/shpom.htm](http://www.okhistory.org/shpo/shpom.htm)

July 29, 2013

Mr. Charles Butchec, Chief  
Asset Management Flight  
DAF 97<sup>th</sup> Civil Engineering Squadron  
401 "L" Avenue  
Altus AFB, OK 73523

RE: File #1196-13; DAF Proposed Bed-Down Project for Building #285, Altus Air Force Base

Dear Mr. Butchec:

We have reviewed the documentation submitted on the referenced project in Jackson County. We find that the project will have no adverse effect on Building #285, a property eligible for listing the National Register of Historic Places. Our opinion is based on the following facts:

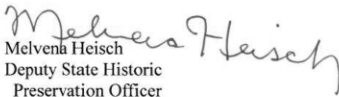
1. The exterior of Building #285 is not to be altered by the project.
2. The Tail Enclosure portion of the project will be self-supporting and removable without inflicting damage to any part of the Building #285 exterior.
3. The project's interior alterations are to accommodate new storage requirements. These alterations are not in the hangar space, and no demolition of character-defining features of the historic construction is proposed.

Each of these project design considerations conform, in detail, to the requirements of the *Secretary of the Interior's Standards for Rehabilitation and Guidelines for Rehabilitating Historic Buildings*.

Unless you receive an objection from any other consulting party during the comment period pursuant to 36 CFR Part 800.5(c)(1), this correspondence documents that your agency has completed the Section 106 process in accordance with the Advisory Council on Historic Preservation's (Council's) regulations that went into effect on January 11, 2001, and the amendments to these regulations that became effective on August 5, 2004. You are no longer required to provide documentation of findings of "no adverse effect" to the Council.

Thank you for the opportunity to review this project. Future correspondence pertaining to this project must reference the above underlined file number. If you have any questions, please do not hesitate to call Mr. Harry Simms, Historic Preservation Architect, at (405)522-4479. Thank you.

Sincerely,

  
Melvena Heisch  
Deputy State Historic  
Preservation Officer

MH:pm

cc: Dr. Robert Brooks, OAS

## A.5.2 Fairchild AFB NHPA Section 106 SHPO Consultation Letter

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DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 92D AIR REFUELING WING (AMC)  
FAIRCHILD AIR FORCE BASE WASHINGTON

JUN 10 2013

Lieutenant Colonel Patrick J. Obruba  
92d Civil Engineer Squadron Commander  
100 W. Ent Street  
Fairchild AFB WA 99011

Mr. Nicholas Vann  
WA State Dept. of Archaeology and Historic Preservation  
1063 South Capitol Way, Suite 106  
Olympia WA 98501

Dear Mr. Vann,

As per Section 106 of the National Historic Preservation Act, 36 CFR Part 800, I am requesting your consultation on undertakings related to the potential beddown of the KC-46A tanker aircraft. Fairchild Air Force Base (FAFB) is a proposed location for the first Main Operating Base (MOB). The first MOB is projected to receive approximately 36 KC-46A aircraft which is similar to the number of KC-135 tankers currently assigned to FAFB. The base ultimately selected as the first MOB will have currently assigned tankers phased out as the new aircraft is beddown. Basing the aircraft at FAFB would require the construction and renovation of facilities to accommodate the new personnel and aircraft associated with the mission. The timeframe for this undertaking is 2014-2015, however planning is currently underway. FAFB has determined the Area of Potential Effect (APE) and completed an inventory of historic properties within the APE per 36 CFR § 800.4.

Fairchild determined the APE for these undertakings is limited to the footprint of potential construction activities, indicated on the attached map. Our rationale is the KC-46A will operate in existing airspace and the types of flight operations will mirror historical KC-135 operations. Air refueling operations typically occur at elevations greater than 14,000 feet above ground level. Operations in the vicinity of Fairchild AFB will consist of aircraft operations similar to the KC-135 mission. These include take offs, landings, and flying patterns in the local airspace at Fairchild AFB. Preliminary analysis indicates noise levels from these operations will be similar to noise levels associated with the KC-135 mission. Therefore, the APE for potential historical building evaluations does not include airspace or the environment outside of the construction related footprints.

The two NRHP eligible buildings in the APE are Building 2245 and Building 2050. We find that the MOB undertaking as currently envisioned will have no adverse impact on Building 2245. Additionally, we find that the MOB undertaking is likely to have an adverse impact on Building 2050.

Building 2245 was constructed in 1943 and is a two-story poured reinforced concrete structure with a brick façade. The interior had renovations throughout the 1950s, 1960s, and 1970s to accommodate changing office space needs and technology. In 1986, the building received a full scale remodel to include the replacement of original wood sash windows with dark bronzed anodized aluminum frame windows and a gutting of the interior. New office finishes included gypsum board walls, acoustical ceiling tiles, upgraded electrical and mechanical systems, and the installation of an elevator.

The work proposed in Building 2245 in support of a KC-46A beddown is strictly limited to the interior to accommodate a shifting of office spaces. Based on the continuous and significant interior remodels performed to date, it is our finding that additional interior renovations will have "No Adverse Effect" on Building 2245.

Building 2050 would receive extensive upgrades and modifications to support the KC-46A aircraft. The exterior upgrades are required to transform Building 2050 into a functional Air Force facility, regardless of whether Fairchild AFB is ultimately selected as the first MOB. Some major undertakings proposed include but are not limited to: Upgrade of the hangar doors to include anti-terrorism/force protection (ATFP) provisions and tail door modifications; installation of an exterior fire egress (previously found to have an adverse impact); utility service updates impacting the landscaping and parking areas; window replacement and other ATFP upgrades; and a complete repainting. The proposed changes to Building 2050, when considered cumulatively with previous modifications to the facility, will have an "Adverse Effect" to the integrity of the significant characteristics of the facility, likely removing its eligibility for registry on the NRHP.

We request your concurrence on our determination of the APE and our inventory of historic properties in the APE. Our contact person for this project's Section 106 consultation is Steve Selser, 100 W. Ent Street, Suite 155, Fairchild AFB, WA 99011 or (509)247-8116 or [steven.selser@us.af.mil](mailto:steven.selser@us.af.mil).

Sincerely,

PATRICK J. OBRUBA, Lt Col. USAF  
Commander

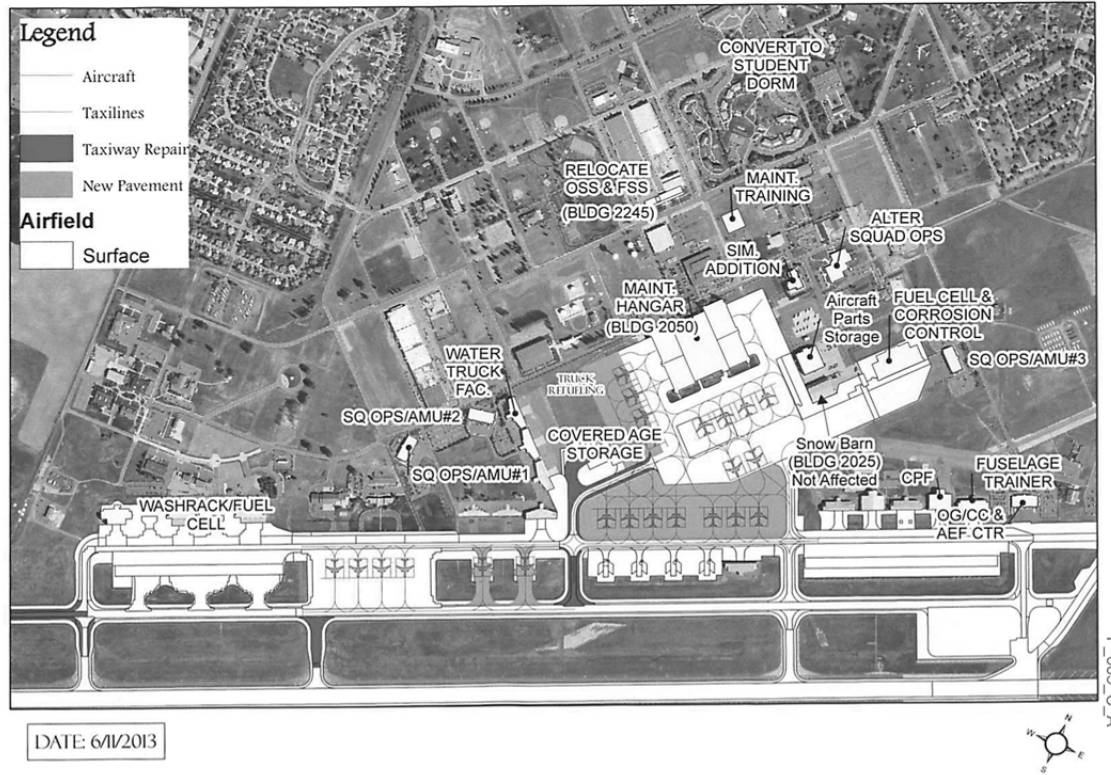
Attachment:  
KC-46A APE

## A.5.2 Fairchild AFB NHPA Section 106 SHPO Consultation Letter (Continued)

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KC-46A DEVELOPMENT PLAN

FAIRCHILD AFB



A.5.2.1 Fairchild AFB NHPA Section 106 SHPO Consultation Response

F\_005\_C\_A-R1



Allyson Brooks Ph.D., Director  
State Historic Preservation Officer

June 25, 2013

Lieutenant Colonel Patrick J. Obruba  
92d Civil Engineer Squadron Commander  
Fairchild AFB  
100 W. Ent Street  
Fairchild AFB, WA 99011

Attn: Steve Selser, Suite 155

In future correspondence please refer to:

Log: 062513-11-USAF  
Property: Fairchild AFB Building 2245 and Building 2050  
Re: KC-46A tanker aircraft beddown - APE Concur

Dear Lt. Col. Obruba:

We have reviewed the materials forwarded to our office for the above referenced project. Thank you for your description of the area of potential effect (APE) for the project. We concur with the definition of the APE. We look forward to the results of your consultation with the concerned tribes, and continuing consultation once the detailed effects of the project are known. We would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4).

Once more information is known about the effects of work proposed for Building 2245, please contact DAHP for further consultation. Based on your description of the proposal to provide anti-terrorism/force protection (ATFP), tail door modifications, installation of an exterior egress system, window replacement, and other ATFP upgrades for Building 2050, there is likely to be an Adverse Effect. For each of these projects, we request photographs of existing conditions in proposed areas of work, and drawings to include – at a minimum – floor plans and exterior elevations.

These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer in conformance with Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Should additional information become available, please contact DAHP for further consultation. We look forward to reviewing a draft Memorandum of Agreement (MOA) for the proposed effects at Building 2050.

Thank you for the opportunity to review and comment. If you have any questions, please feel free to contact me.

Sincerely,

Nicholas Vann  
Historical Architect  
(360) 586-3079  
Nicholas.Vann@dahp.wa.gov

State of Washington • Department of Archaeology & Historic Preservation  
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065  
www.dahp.wa.gov



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 92D AIR REFUELING WING (AMC)  
FAIRCHILD AIR FORCE BASE WASHINGTON

F\_005\_C\_A-R2

04 SEP 2013

Lieutenant Colonel Jason S. Campbell  
92d Civil Engineer Squadron Commander  
100 W. Ent Street  
Fairchild AFB WA 99011

Mr. Nicholas Vann  
WA State Dept. of Archaeology and Historic Preservation  
1063 South Capitol Way, Suite 106  
Olympia WA 98501

SUBJ: KC-46 Beddown Concurrence

Dear Mr. Vann,

Thank you for your concurrence with the Area of Potential Effect (APE) and the effects determination on Building 2050. If the project moves forward to the design stages and more is known regarding alterations to both Building 2050 and Building 2245, we will reengage consultation.

Our contact person is Steve Selser, 100 W. Ent Street, Suite 155, Fairchild AFB, WA 99011 or (509)247-8116 or steven.selser@us.af.mil.

Sincerely,

  
JASON S. CAMPBELL, Lt Col. USAF  
Commander

**A.5.2.2 Amendment to MOA between Fairchild AFB and the Washington SHPO Regarding Demolition Activities Associated with Fairchild AFB**

AMENDMENT #1 TO:

MEMORANDUM OF AGREEMENT (MOA)

BETWEEN THE COMMANDER, 92D AIR REFUELING WING,  
FAIRCHILD AIR FORCE BASE  
AND  
THE WASHINGTON STATE HISTORIC PRESERVATION OFFICER  
AND  
THE SPOKANE COUNTY HISTORIC PRESERVATION OFFICER  
REGARDING DEMOLITION ACTIVITIES ASSOCIATED WITH  
FAIRCHILD AIR FORCE BASE, WASHINGTON

WHEREAS the MOA was originally executed on November 29, 2012;

WHEREAS Fairchild Air Force Base (AFB) has been identified as a "Reasonable Alternative" for the beddown of the KC-46 Main Operating Base (MOB1);

WHEREAS building 2050, a facility eligible for national registry, has been identified within the Area of Potential Effect (APE) and would likely be adversely impacted by required alterations to support the KC-46;

WHEREAS Fairchild Air Force Base (AFB) will send a copy of this executed amendment to the ACHP;

NOW THEREFORE, in accordance with Stipulation VIII, Amendments, of the MOA, Fairchild AFB, the Washington Department of Archeology and Historic Preservation (DAHP), and the Spokane City/County Historic Preservation Office (SCCHPO) agree to amend the MOA as follows:

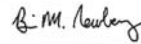
Add new Stipulation XI:

If Fairchild AFB is selected to be the KC-46 MOB1, the U.S. Air Force shall consult with WA DAHP and SCCHPO to mitigate the effects of the undertaking. The agreed upon mitigation will be an additional stipulation in a future amendment to this MOA.

SIGNATORIES:

FOR THE DEPARTMENT OF THE AIR FORCE; FAIRCHILD AIR FORCE  
BASE

1/16/2014

X 

BRIAN M. NEWBERRY, Col, USAF  
Commander, 92 ARW

Signed by: NEWBERRY, BRIAN, MICHAEL 1154056803

FOR THE SPOKANE COUNTY HISTORIC PRESERVATION OFFICE



Date: 2/4/2014

KRISTEN GRIFFIN  
SPOKANE COUNTY HISTORIC PRESERVATION OFFICER

FOR THE WASHINGTON STATE HISTORIC PRESERVATION OFFICE



Date: 2/16/14

ALLYSON BROOKS, Ph.D.  
WASHINGTON STATE HISTORIC PRESERVATION OFFICER

### A.5.3 Grand Forks AFB NHPA Section 106 SHPO Consultation Letter

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G\_025\_C\_A



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

Lt Col Edward P. Phillips  
319 CES/CC  
525 Tuskegee Airmen Blvd  
Grand Forks AFB, ND 58205-6434

JUN 21 2013

Merlan E. Paaverud  
State Historic Preservation Officer  
State Historical Society of North Dakota  
612 East Boulevard Ave  
Bismark ND 58505-0200

Dear Mr. Paaverud,

The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) under the National Environmental Policy Act (NEPA) to assess the potential environmental consequences associated with the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) bed-down of the KC-46A tanker aircraft. McConnell Air Force Base (AFB) in KS was selected as the preferred alternative for the MOB 1 mission and Grand Forks AFB, ND and Fairchild AFB, WA are listed as candidates for the MOB 1 mission. Altus AFB is the preferred alternative for the FTU mission. A no-action alternative, where the KC-46A aircraft would not be located at any of these installations, will also be examined.

The beddown for the MOB 1 mission would include placement of 36 KC-46A aircraft for three squadrons at one installation. The selected basing location would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements for the MOB 1 mission would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base on Grand Forks AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. The attached table and project map identifies specific facilities that might be affected by the proposed undertaking. Additional information can be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

In compliance with the National Historic Preservation Act (NHPA) and 36 CFR 800, Grand Forks AFB, hereby enters into Section 106 consultation regarding the proposed undertaking. The Area of Potential Effect (APE) for this effort is within the base boundary and generally located in the airfield operations developed area (see Attachment 1). The KC-46A would operate in existing airspace and the types of flight operations would mirror historical KC-135 operations once located at Grand Forks AFB. These operations would include take offs,

landings, and flying patterns in local airspace. Air refueling operations typically occur at elevations greater than 14,000 feet above ground level. Preliminary analysis indicates that noise levels from these operations would be similar to noise levels associated with the former KC-135 mission. Therefore the APE for potential historical building evaluations does not consider airspace or the environment outside of the construction related footprints described above.

An inventory of potentially historic properties was completed in compliance with Section 110 of NHPA and concurrence from your office was obtained on that work effort in Oct 2011. No historic properties are located within the APE according to our inventory. The following documentation as detailed in Section 800.11(d) is included for your thoughtful review:

- A description of the KC-46A project (see above)
- A delineation of the APE (Attachment 1)
- A summary of the efforts made to identify historic properties in the project's APE, including, as appropriate, efforts to seek information pursuant to Section 800.4(b), identification of historic properties (See facilities list, Attachment 2).
- The basis for determining that no historic properties are present or affected (Attachment 2).

Grand Forks AFB suggests that the proposed undertaking to bed-down 36 KC-46A aircraft at this installation would result in a finding of "No Historic Properties Affected" and we request concurrence on this finding from your office pursuant to Section 106 of the NHPA. Please review all the attachments and provide any comments or information directly to 319th CEA/CEAN, 525 Tuskegee Airmen Boulevard, Grand Forks AFB, North Dakota 58205-6434. Should you have any questions or need additional information please call/email Ms. Kristen Rundquist, Cultural Resources Manager at (701) 747-4774 or [kristen.rundquist@us.af.mil](mailto:kristen.rundquist@us.af.mil).

If we do not hear from you within 30 days of receipt of this letter, we will assume that you do not object to our proposed determination of no historic properties affected. We then will proceed with the Environmental Impact Analysis Process under NEPA, subject to the provisions of 36 CFR 800.13 for treating historic properties discovered during an undertaking. Thank you for your time and efforts.

Sincerely,

EDWARD P. PHILLIPS, Lt Col, USAF  
Commander, 319th Civil Engineer Squadron

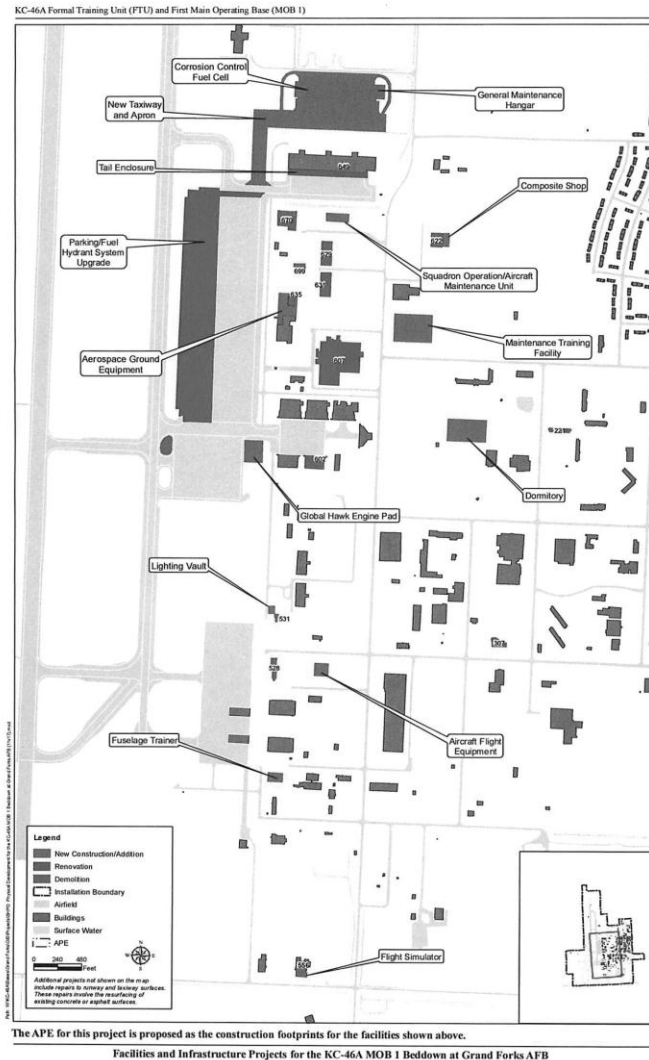
Attachments:

1. Map of Construction Footprint
2. Facilities and Infrastructure Project Listing

## A.5.3 Grand Forks AFB NHPA Section 106 SHPO Consultation Letter (Continued)

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## ATTACHMENT 2

Facilities and Infrastructure Projects for the  
KC-46A MOB 1 Beddown at Grand Forks AFB

Project	Status	Year Constructed
<b>Demolition</b>		
Building 531	Not Eligible*	1957
Building 635 <sup>a</sup>	Not Eligible **	1973
Building 699	Not Eligible **	2010
<b>Renovation</b>		
Building 221, Dormitory	Mitigated (PC on Unaccompanied Housing)*	1958
Building 307, Air National Guard Wing Headquarters	Not Eligible*	1959
Building 528, Base Operations	Not Eligible*	1957
Building 602, Remotely Piloted Aircraft Wing	Not Eligible*	1959
Building 607, Operation Group/Operations Support Squadron/ Aircraft Maintenance Squadron	Not Eligible*	1959
Building 629, Squadron Operations/Aircraft Maintenance Unit	Not Eligible **	1997
Building 631, Squadron Operations /Aircraft Maintenance Unit	Not Eligible **	1998
Building 670, Supply Shop (Renovations consist of the installation of a cage for segregated storage)	Not Eligible **	1990
Runway and Overrun Repairs	NA	NA
Roads and Parking Upgrades	NA	NA
Parking Apron/ Fuels Hydrant Upgrade	NA	NA
Taxiway A, F, G Renovations	NA	NA
<b>Additions/Alterations</b>		
Building 556, Flight Simulator (Weapon System Trainers, Boom Operator Trainers)	Not Eligible **	1983
Building 622, Composite Shop	Not Eligible*	1961
Building 649, General Maintenance Hangar (3-bay)/Alternate Mission Equipment	Not Eligible **	1987
Building 661, Aerospace Ground Equipment	Not Eligible **	1988
<b>New Construction</b>		
Fuel Cell /Corrosion Control (2-Bay) / General Maintenance Hangar (1-Bay) with Apron	NA	NA
New Taxiway and Parking Apron	NA	NA
Global Hawk Engine Pad (Required for Displaced Global Hawk)	NA	NA
Maintenance Training Facility (MTF)	NA	NA
Squadron Operations/ Aircraft Maintenance Unit	NA	NA
Aircrew Flight Equipment (AFE) Facility	NA	NA
Dormitory	NA	NA
Fuselage Trainer (FuT) Facility	NA	NA
Airfield Lighting Vault	NA	NA

## Notes:

\* Demolish building to construct new Aerospace Ground Equipment (AGE).

<sup>a</sup> Not Eligible based on the "Final Cultural Resource Survey of Historic Places, Evaluation of Historic Buildings, Structures and Sites at Grand Forks Air Force Base, Grand Forks County, ND" referenced as ND SHPO 97-0527CJ, Oct 4, 2011.

\*\* Not Eligible based on the recent construction dates and the lack of significant cultural context

A.5.3.1 Grand Forks AFB NHPA Section 106 SHPO Consultation Response

G\_025\_C\_A-R1



COPY

Jack Dalrymple  
Governor of North Dakota

July 8, 2013

North Dakota  
State Historical Board

Edward Phillips Lt Col USAF  
Commander 319<sup>th</sup> Civil Engineer Squadron  
319 CES/CEAN  
525 Tuskegee Airmen Blvd  
Grand Forks AFB 58205

Gerold Gemtholz  
Valley City - President

Calvin Grinnell  
New Town - Vice President

A. Ruric Todd III  
Jamestown - Secretary

ND SHPO 97-0527CK: Formal Training Unit (FTU) and First Main Operating Base (MOB-1) bed-down of the KC-46A tanker aircraft at Grand Forks Air Force Base, North Dakota

Albert I. Berger  
Grand Forks

Diane K. Larson  
Bismarck

Dear Lt. Col Phillips,

Chester E. Nelson, Jr.  
Bismarck

We reviewed ND SHPO 97-0527CK: Formal Training Unit (FTU) and First Main Operating Base (MOB-1) bed-down of the KC-46A tanker aircraft at Grand Forks Air Force Base, North Dakota, and concur with a "No Historic Properties Affected" determination, provided the project remains as described in your letter dated June 21, 2013.

Margaret Puetz  
Bismarck

Sara Otte Coleman  
Director

Tourism Division

Kelly Schmidt  
State Treasurer

Thank you for the opportunity to review this project. If you have any questions please contact Susan Quinnell, at (701) 328-3576 or [squinnell@nd.gov](mailto:squinnell@nd.gov). Thank you for the excellent documentation package, and the opportunity to review.

Alvin A. Jaeger  
Secretary of State

Sincerely,

Mark Zimmerman  
Director

Parks and Recreation  
Department

Grant Lew  
Director

Merlan E. Paaverud, Jr.  
State Historic Preservation Officer (North Dakota)

Department of Transportation

Merlan E. Paaverud, Jr.  
Director

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97-0527 CK

North Dakota Heritage Center • 612 East Boulevard Avenue, Bismarck, ND 58505-0830 • Phone: 701-328-2666 • Fax: 701-328-3710  
Email: [histso@nd.gov](mailto:histso@nd.gov) • Web site: <http://history.nd.gov> • TTY: 1-800-366-6888

## A.5.4 McConnell AFB NHPA Section 106 SHPO Consultation Letters

### A.5.4.1 McConnell AFB NHPA Section 106 SHPO Consultation Letter 1

M\_013\_C\_A



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

MAY 06 2013

MEMORANDUM FOR Patrick Zollner  
Deputy SHPO  
Kansas State Historical Society  
6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615-1099

FROM: 22 CES/CC  
53000 Hutchinson Street, Suite 5  
McConnell AFB, KS 67221

SUBJECT: Consultation on Determinations of Eligibility at McConnell Air Force Base, KS

1. 22d Civil Engineer Squadron (22 CES) requests consultation on our determinations of eligibility for eight buildings in accordance with 36 CFR 800. All buildings are located in Sedgwick County KS at McConnell AFB. These determinations were undertaken in order to further our compliance with the inventory and stewardship requirement in section 110 of the National Historic Preservation Act. Our determinations are based upon a survey conducted by a Secretary of Interior Qualified Architectural Historian. The summary of findings is provided in attachment 1 to assist in your consultation. Additionally, the properties have been entered in the Kansas Historic Resource Inventory and the survey forms are in attachment 2.

2. McConnell AFB determined the following eight buildings are not eligible for nomination: 973, 977, 984, 985, 1094, 1108, 1129 and 1120. McConnell AFB considers building 1129 to warrant reevaluation under section 110 in 2016.

3. Please concur or noncur with our determinations.

4. The contact person for this assessment is Tina Seemayer, 53000 Hutchinson St, Ste 5, McConnell AFB KS 67221, (316) 759-4445 or [tina.seemayer@mcconnell.af.mil](mailto:tina.seemayer@mcconnell.af.mil).

  
JASON J. LOSCHINKSEY, Lt Col, USAF  
Base Civil Engineer

2 Attachments  
1. Survey Report  
2. KHRI survey forms

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

A.5.4.2 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 1 Response*

KSR&C No. 13-05-112 M\_013\_C\_A-R1

6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615



Kansas Historical Society

phone: 785-272-8681  
fax: 785-272-8682  
cultural\_resources@kshs.org

Sam Brownback, Governor  
Jennie Chinn, Executive Director

May 15, 2013

Tina Seemayer  
53000 Hutchinson St., Ste. 109  
McConnell AFB KS 67221

Re: Determination of Eligibility for Eight Buildings, McConnell AFB, Wichita – Sedgwick County

Dear Ms. Seemayer:

We have reviewed the materials received May 14, 2013 in accordance with 36 CFR Part 800. In reviews of this nature, the SHPO determines whether a federally funded, licensed, or permitted project will adversely affect properties that are listed or determined eligible for listing in the National Register of Historic Places. The SHPO concurs with the Department of the Air Force that the following buildings are not eligible for listing in the National Register: 973, 977, 985, 1094, 1108, 1129, and 1120. We also concur that Building 1129 may warrant further consideration under Section 110 when it reaches 50 years of age.

Thank you for giving us the opportunity to comment on this proposal. Please refer to the Kansas State Review & Compliance number (KSR&C#) listed above on any future correspondence. Please submit any comments or questions regarding this review to Kim Gant at 785-272-8681, ext. 225 or kgant@kshs.org.

Sincerely,

Jennie Chinn  
State Historic Preservation Officer

Patrick Zollner  
Director, Cultural Resources Division  
Deputy State Historic Preservation Officer

A.5.4.3 McConnell AFB NHPA Section 106 SHPO Consultation Letter 2



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

MEMORANDUM FOR Patrick Zollner  
Deputy SHPO  
Kansas State Historical Society  
6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615-1099

FROM: 22 CES/CC  
53000 Hutchinson Street, Suite 5  
McConnell AFB, KS 67221

SUBJECT: Consultation on POTENTIAL KC-46A UNDERTAKINGS at McConnell Air Force Base, KS

1. 22d Civil Engineer Squadron (22 CES) requests consultation on undertakings related to the potential beddown of KC-46A tanker aircraft in accordance with 36 CFR 800. McConnell AFB is a proposed location for the first Main Operating Base (MOB) or a Formal Training Unit (FTU). McConnell AFB could receive one undertaking or neither undertaking, but not both. The Air Force identified McConnell as the preferred alternative for the MOB. The proposed MOB project bases 36 KC-46A aircraft. The FTU project bases 8 KC-46A aircraft. McConnell currently has over 60 KC-135 tankers. Basing the aircraft at McConnell requires the construction and renovation of facilities to accommodate the new personnel and aircraft associated with the mission. The timeframe for this undertaking is 2014-2015, however planning is currently underway. McConnell has determined an Area of Potential Effect (APE) and completed an inventory of historic properties within the APE per 36CFR800.4. Our findings are below. Attachments 1-4 are provided to assist in your consultation efforts and include:

- Descriptions and locations of the KC-46A undertakings (APE)
- Descriptions of affected historic properties, including information on the characteristics qualifying them for the National Register of Historic Places
- Inventory of historic properties and the undertakings' potential effects on these historic properties

2. McConnell proposes the APE for these undertakings is limited to the footprint of potential construction activities, indicated on the attached maps. Our rationale is the KC-46A will operate in existing airspace and the types of flight operations will mirror historical KC-135 operations. Air refueling operations typically occur at elevations greater than 14,000 feet above ground level. Operations in the vicinity of McConnell AFB will consist of aircraft operations similar to the KC-135 mission. These include take offs, landings and flying patterns in the local airspace at

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

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10 Jun 2013

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McConnell AFB. Preliminary analysis indicates noise levels from these operations will be similar to noise levels associated with the KC-135 mission. Therefore, the APE for potential historical building evaluations does not consider airspace or the environment outside of the construction related footprints described in the attachments.

3. The two NRHP buildings in the APE are 1218 and 1106. We propose the FTU under-taking as currently envisioned has no adverse impact. The MOB undertaking as currently envisioned likely has an adverse effect on Building 1106. Design details on 1218 are not yet available as the planning stage is just beginning. Therefore, a comprehensive determination in regards to 36 CFR 800.5 cannot be offered at this time. We will continue our communications with you on regarding 36 CFR 800.5 and 36 CFR 800.6 requirements.

4. We request your concurrence on our determination of the APE and the adequacy of historic properties inventory in the APE.

5. The contact person for this assessment is Tina Seemayer, 53000 Hutchinson St, Ste 5, McConnell AFB KS 67221, (316) 759-4445 or tina.seemayer@mcconnell.af.mil.

  
JASON J. LOSCHINKSEY, Lt Col, USAF  
Base Civil Engineer

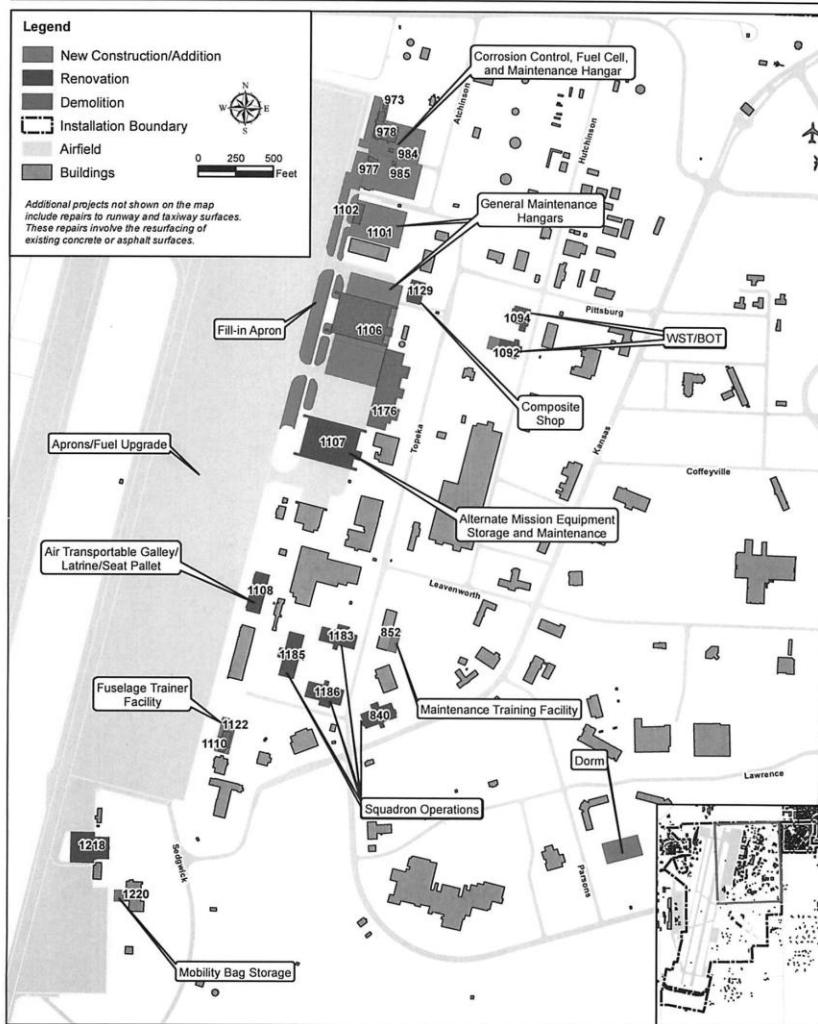
4 Attachments

1. MOB locations and APE
2. FTU locations and APE
3. MOB and FTU projects
4. Adverse effects considerations

A.5.4.3 McConnell AFB NHPA Section 106 SHPO Consultation Letter 2 (Continued)

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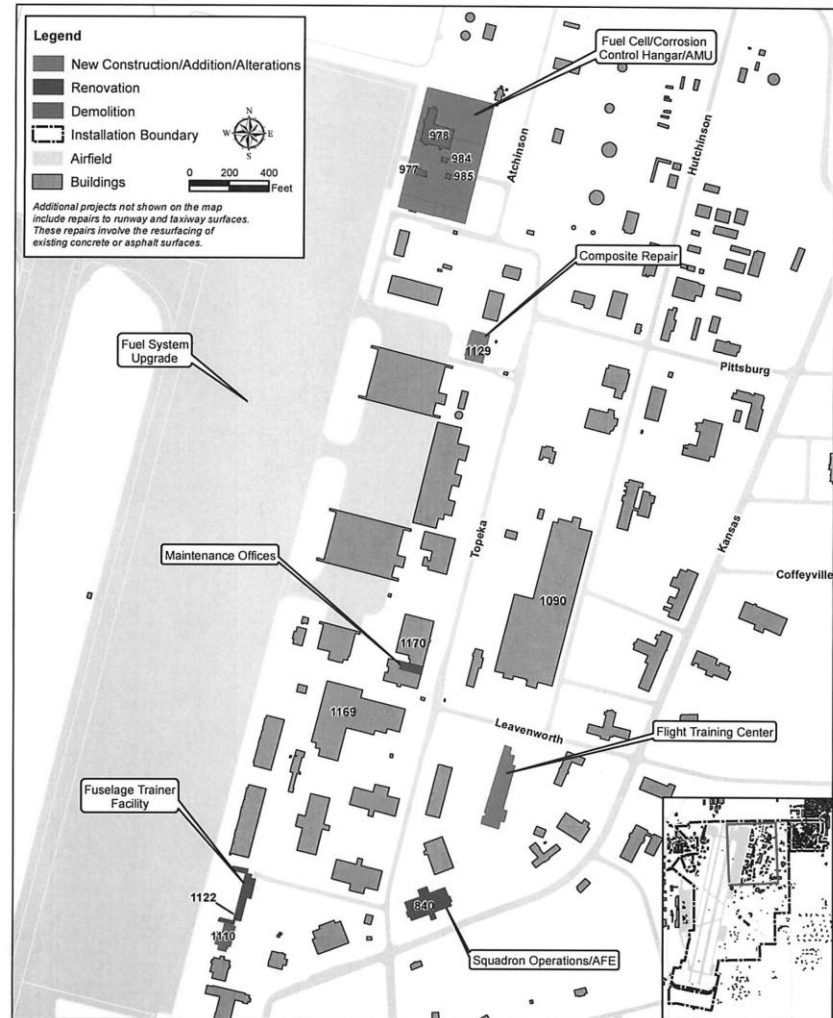
KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



Facilities and Infrastructure Projects for the KC-46A MOB 1 Beddown at McConnell AFB

M\_014\_C\_A

KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



Facilities and Infrastructure Projects for the KC-46A FTU Beddown at McConnell AFB

A.5.4.3 McConnell AFB NHPA Section 106 SHPO Consultation Letter 2 (Continued)

M\_014\_C\_A

Facilities and Infrastructure Projects  
KC-46A MOB 1 Beddown

Project	Status	Year Constructed
<b>Demolition</b>		
Building 973	Not Eligible <sup>a</sup>	1970
Building 977	Not Eligible <sup>a</sup>	1977
Building 978	Not Eligible KSR&C 11-08-153/12-03-114	1974
Building 984	Not Eligible <sup>a</sup>	1988
Building 985	Not Eligible <sup>a</sup>	1987
Building 1101	Not Eligible <sup>b</sup>	1991
Building 1102	Not Eligible KSR&C 10-06-094	1987
Building 1106	Eligible	1954
Building 1110	Not Eligible KSR&C 11-05-012/11-08-153	1952
Building 1122	Not Eligible KSR&C 11-08-153	1958
<b>Renovation</b>		
Building 1108 Air Transportable Galley/Latrine /Seat Pallet Facility	Not Eligible <sup>a</sup>	1966
Building 1094, 2/3 Weapon System Trainer and 2 Boom Operator Trainer	Not Eligible <sup>b</sup>	1988
Building 1129; Composite Shop	Not Eligible <sup>a</sup>	1966
Building 840, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	2003
Building 1183, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	1998
Building 1185, Squadron Operations	Not Eligible <sup>b</sup>	2001
Building 1186, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	1999
Building 850, AFRC Wing Headquarters	Not Eligible <sup>b</sup>	1998
Building 1218, Operations Group Headquarters	Eligible	1942
Building 1107, Alternate Mission Equipment/Aircraft Maintenance	Eligible	1954
Building 1108, Fleet Services	Not Eligible <sup>a</sup>	1966
Taxiway D Repair	NA	NA
Taxiway F Repair	NA	NA
Apron Fill-In	NA	NA
Roads and Parking Upgrades	NA	NA
<b>Additions/Alterations</b>		
Building 1092, 1 Weapon System Trainer and 1 Boom Operator Trainer	Not Eligible <sup>b</sup>	2000
Building 1220, Mobility Bag Storage Addition	Not Eligible <sup>b</sup>	1988
Building 852, Maintenance Training Facility	Not Eligible <sup>b</sup>	1987
Apron Fuels Hydrant Upgrade	NA	NA
<b>New Construction</b>		
Fuel Cell/Corrosion Control Hangar (2-bay)	NA	NA
General Maintenance Hangar (3-bay)+ (1-bay); Maintenance Shops, E/E Shop	NA	NA
Fuselage Trainer Facility	NA	NA
Dormitory	NA	NA

<sup>a</sup> Pending SHPO confirmation of recent Section 110 consultation

<sup>b</sup> Not Eligible based on the recent construction dates and the lack of significant cultural context

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Facilities and Infrastructure Projects  
KC-46A FTU Beddown

Project	Status	Year Constructed
<b>Demolition</b>		
Building 977	Not Eligible <sup>a</sup>	1977
Building 978	Not Eligible KSR&C 11-08-153 and 12-03-114	1974
Building 984	Not Eligible <sup>a</sup>	1988
Building 985	Not Eligible <sup>a</sup>	1987
Building 1110	Not Eligible KSR&C 11-05-012 and 11-08-153	1952
Building 1122	Not Eligible KSR&C 11-08-153	1958
<b>Renovation</b>		
Airfield/Runway Taxiway D and F Repair	NA	NA
Parking Ramp Apron Type III Fuel Hydrant System Upgrade	NA	NA
Building 840, Squadron Operations & Aircrew Flight Equipment	Not Eligible <sup>b</sup>	2003
<b>New Construction</b>		
Fuel Cell and Corrosion Control Maintenance Hangar (2-bay)	NA	NA
Aircraft Maintenance Unit /Maintenance Back Shops	NA	NA
Fuselage Trainer Facility	NA	NA
Flight Training Center	NA	NA
<b>Additions/Alterations</b>		
Building 1129, Composite Repair Facility (Back Shops)	Not Eligible <sup>a</sup>	1966
Building 1170, Director of Maintenance Office	Not Eligible <sup>b</sup>	1988

<sup>a</sup> Pending SHPO confirmation of recent Section 110 consultation

<sup>b</sup> Not Eligible based on the recent construction dates and the lack of significant cultural context

### A.5.4.3 McConnell AFB NHPA Section 106 SHPO Consultation Letter 2 (Continued)

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#### ATTACHMENT 4

**Historic Characteristics** - Building 1106 and 1218 are both in the KHRI. They are numbers 173-12357 and 173-11382, respectively. Information is also available in the McConnell 2004 ICRMP which was coordinated with SHPO.

##### Building 1107 – Double-Cantilevered Medium Bomber Hangar

Earliest surviving example (with Bldg 1106) of this hangar type  
Exterior as shown on Plan 39-01-44  
Space to service two B-29s, two B-50s or one B-36  
Characteristic interior braced steel truss system  
Multi-paneled sliding hangar doors  
Flat exterior roof, arched interior cross-section  
Enameled steel exterior  
Windows  
Round door pockets  
Shallow-gable roof  
Roof structure  
Openness of interior space in hangar  
CMU Office space

##### Building 1218-Kansas National Guard Armory and Hangar – Armory Portion

"Kansas National Guard" bas relief and associated stonework around the main entrance  
Flat, parapet roof  
Stylized carved stone medallions  
Stylized carved stone parapet trim  
Stylized stone coping along roofline  
Downspouts  
Exterior brickwork and limestone (material, design, and color)  
Multi-paned fixed steel windows on hangar  
Stone window sills  
Retractable doors on hangar  
Shallow gable roof on hangar  
Interior glazed tile (treated in a reversible manner and treatment should continue)  
Original doors and wood trim  
Double-loaded corridors and circulation including stairs (concrete work and woodwork)  
Any remaining original baseboards or trim  
Parachute area

##### Building 1218-Kansas National Guard Armory and Hangar – Hangar Portion

Stylized carved stone medallions  
Stylized carved stone parapet trim  
Masonry and brickwork (material, design, and color)  
Multi-paned combination fixed windows  
Multi-paned cantilevered sectional sliding hangar doors  
Definitive brick pilasters between windows on west elevation  
Stone sills

**Proposed Actions** – The FTU has no proposed actions involving historic properties. For the MOB undertaking:

Building 1218 currently houses the Operation Support Squadron for the KC-135. The KC-46A Operation Support Squadron personnel will be housed in the facility. The existing space within Building 1218 is adequate to support the new staff but interior renovations would be required to accommodate a new Wing Command Suite. Interior

renovations are anticipated to include removal of non-load bearing walls and construction of new walls or partitions to reconfigure office space.

##### Hangar 1106

Four hangars (1176, 1166, 1106, and 1107) were evaluated for reuse by the KC-46A mission. None of these hangars were adequate for use by the KC-46A. Descriptions of their current use and reasons the hangars are not suitable for use by the KC-46A are described below.

- Hangar 1166: Currently the primary corrosion control and wash rack. This 1-bay hangar is not sufficient for KC-46A aircraft due to insufficient length, width, and height.
- Hangar 1107: Currently a 4-bay maintenance hangar. Slots 1 and 4 cannot be used for aircraft maintenance due to internal structures supporting an equivalent to 4 AMUs. Slots 2 and 3 are open and used for KC-135 general maintenance. Neither of the 2 bays will support the KC-46A due to insufficient length and tail height. Initially modifications to the hangar door were proposed for both Hangars 1107 and 1106 to allow sufficient clearance for the KC-46A tail wing. A structural analysis was conducted and concluded that the hangar could not support the required modifications.
- Hangar 1106: Currently a 4-bay maintenance hangar. Slots 1 and 2 are KC-135 nose docks and are not used due to internal obstacles. Slot 3 is the current Isochronal Inspection (ISO) dock; and slot 4 is available for KC-135 maintenance. None of the 4 bays support the KC-46A due to insufficient bay length and tail height.
- Hangar 1176N: Currently the primary fuel cell; length and height not sufficient for KC-46A.
- Hangar 1176S: Currently alt wash rack; length and height not sufficient for KC-46A.

In order to provide sufficient space for the construction of three general maintenance hangars, Hangar 1106 will need to be demolished. During site visits to the McConnell AFB a number of alternatives to the demolition of Hangar 1106 were considered. The preferred alternative was to modify the hangar doors of 1106 to accommodate the higher tail height of the KC-46A and to install an addition or eyebrow to the hangar to accommodate the greater length of the KC-46A. A structural analysis of the hangar was undertaken by an A/E firm over a period of 5 days, and they determined this alternative was not feasible. The building structure could not support the proposed renovations to the facility.

*A.5.4.4 McConnell AFB NHPA Section 106 SHPO Consultation Letter 2 Response*

6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615



**Kansas**

Kansas Historical Society

M\_014\_C\_A-R1  
KSR&C No. 13-06-087

phone: 785-272-8681  
fax: 785-272-8682  
cultural\_resources@kshs.org

Sam Brownback, Governor  
Jennie Chinn, Executive Director

June 18, 2013

Tina Seemayer  
53000 Hutchinson St., Ste. 109  
McConnell AFB KS 67221

Re: Potential KC-46 Undertakings at McConnell Air Force Base – Sedgwick County

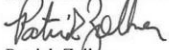
Dear Ms. Seemayer:

We have reviewed the materials received June 17, 2013 in accordance with 36 CFR Part 800. In reviews of this nature, the SHPO determines whether a federally funded, licensed, or permitted project will adversely affect properties that are listed or determined eligible for listing in the National Register of Historic Places. The SHPO concurs that the APE for the undertaking is acceptable and that all historic properties have been identified and evaluated appropriately. We look forward to further consultation on this project.

Thank you for giving us the opportunity to comment on this proposal. Please refer to the Kansas State Review & Compliance number (KSR&C#) listed above on any future correspondence. Please submit any comments or questions regarding this review to Kim Gant at 785-272-8681, ext. 225 or kgant@kshs.org.

Sincerely,

Jennie Chinn  
State Historic Preservation Officer



Patrick Zoller  
Director, Cultural Resources Division  
Deputy State Historic Preservation Officer

*A.5.4.5 McConnell AFB NHPA Section 106 SHPO Consultation Letter 3*

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DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

Lt Col Michael A. Freeman  
Commander, 22d Civil Engineer Squadron  
57830 Pittsburgh Street, Suite 120  
McConnell AFB KS 67221

Patrick Zollner  
Deputy SHPO  
Kansas State Historical Society  
6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615-1099

Dear Mr. Zollner,

In accordance with 36 CFR 800, "Protection of Historic Properties," we are continuing consultation with your office regarding the proposed KC-46A undertakings at McConnell Air Force Base. Refer to initial consultation letter from 22 CES/CC, 10 Jun 2013, subject line of Consultation on potential KC-46A undertakings at McConnell Air Force Base, KS and your reply KSR&C 13-06-087. In this communication we provide our assessment of adverse effects and would like to initiate consultation to resolve adverse effects (following 800.5 and 800.6 respectively). Documentation per 36 CFR §800.11 is provided in Attachments 1-3.

We applied the criteria of adverse effect and propose adverse effects are anticipated for Hangar 1106 and no adverse effects are anticipated for Hangar 1107 and Building 1218. Your concurrence is requested on this finding of adverse effects.

To resolve these adverse effects, we wish to begin consulting with you to avoid, minimize, or mitigate these effects via development of a Memorandum of Agreement (MOA). Specifically, the anticipated demolition of Hangar 1106 will be of particular focus for the MOA, but we prefer the agreement be comprehensive for all historic properties associated with this project's known or potential adverse impacts. By separate letter we are notifying the Advisory Council on Historic Preservation of this intent to consult (per 800.6(a)(1)). At the earliest opportunity, we would appreciate discussing with you or your staff a schedule for developing an MOA, consulting parties you may suggest for consultation in producing an MOA, and how information is to be provided to the public. We look forward to exploring creative mitigation approaches.

For questions on this issue or if further information is required, please contact Tina Seemayer, 57830 Pittsburgh, Suite 120, McConnell AFB KS 67221, (316) 759-4445 or [tina.seemayer@us.af.mil](mailto:tina.seemayer@us.af.mil).

Sincerely

A handwritten signature in black ink, appearing to read "Mike Freeman", is written over a horizontal line.

MICHAEL A. FREEMAN, Lt Col, USAF  
Commander

- 3 Attachments
1. Project locations
  2. Building projects Table
  3. Effects as known

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL



A.5.4.5 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 3 (Continued)*

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**Proposed Demolition of Building 1106, Renovations to Buildings 1218 and Building 1107 at McConnell Air Force Base**

To meet 36 CFR 800.11 requirements, information is provided below on the proposed demolition of Building 1106 and renovations to Buildings 1218 and 1107 at McConnell AFB as part of the KC-46A First Main Operating Base (MOB 1) mission. Each building description includes the location, condition, and historical context/significance of the structure. The action proposed for each building is described, along with the U.S. Air Force's (USAF's) determination of effect, and the alternatives evaluated as part of the USAF's planning and design process.

**Building 1106 (Kansas Historic Resources Inventory [KHRI] Number 173-12357)**

**Location.** Building 1106 is located on the east side of the runway, at the north end of the ramp. It is parallel to Building 1107 and perpendicular to Building 1176.

**Description.** This large aircraft hangar has a front-gable, standing-seam metal roof and vertical metal siding. The north and south elevations have multiple tall, metal, retractable hangar doors. The door pockets at the east and west ends of each façade contain the doors when they

are fully open. These pockets are set beyond the east and west walls so when the doors are open, the entire north and south façades are open the full length of the building. The hangar doors have rectangular openings at the top and bottom of each door. Translucent fiberglass panels fill the openings. Two pairs of hangar doors contain round openings to hug the nose or tail of an aircraft which does not completely fit inside the hangar. The interior floors are concrete, and the roof is supported by metal trusses. A large, concrete pavilion at the center of the hangar supports the double cantilever roof trusses.

In 1952, Wilson et al. adapted Plan 39-01-44 (double cantilever) for this building. This plan refers to the steel structural system and not to the doors. This was the third or fourth of eight versions of the double cantilever design used from 1952 to 1957. The steel trusses cantilever from a central core. The hangar was completed in March 1954. The removable metal panels are original to the 1954 design, before the B-1B and KC-135 aircraft arrived at McConnell AFB. This hangar originally accommodated four B-47 aircraft, was subsequently used to accommodate three B-1B aircraft, and currently houses one KC-135 Stratotanker. Modifications to this facility include corrugated metal sides, metal hangar doors, and a standing-seam metal roof. The interior has been renovated and or rehabilitated several times in the 1980s and 1990s through the addition of cubicle spaces. The open aircraft maintenance space remains largely unaltered and the cantilevered trusses remain visible. The character-defining features of this hangar are:

- Double-cantilevered medium bomber hangar
- Earliest surviving example (with Building 1107) of this hangar type on base
- Exterior as shown on Plan 39-01-44
- Space to service two B-29s, two B-50s, or one B-36
- Characteristic interior-braced steel truss system
- Multi-paneled sliding hangar doors
- Flat exterior roof, arched interior cross-section
- Enameled steel exterior
- Windows
- Round door pockets
- Shallow-gable roof
- Roof structure
- Openness of interior space in hangar
- CMU Office space

**Condition.** Building 1106 is in good condition for its current use.

**Context/Significance.** Building 1106 is nationally significant, and eligible for listing on the National Register of Historic Places (NRHP) under NRHP Criterion A (MILITARY) for its association with the history of the USAF and the development of McConnell AFB as the primary training facility for the newly designed B-47 bomber aircraft, which was assembled at the adjacent Boeing Company plant. This building is also significant under Criterion C (ARCHITECTURE) as an excellent example of the double-cantilever medium bomber hangar. Along with its twin, Building 1107, Building 1106 retains integrity of location, design, setting, workmanship, materials, feeling, and association, and clearly illustrates the property type and period of construction.

**Proposed Action.** Demolition.

**Determination of Effect.** Demolition of this NRHP-eligible building would be considered an adverse effect.

**Consideration of Alternatives and Justification for Selection of Building 1106 for Demolition.** During the site visit to McConnell AFB, a number of alternatives to the demolition of Building 1106 were considered. Some of these alternatives included evaluating the use of other buildings for the new aircraft and the evaluation of alternative siting locations as described below.

The USAF evaluated four hangars (1106, 1107, 1166, and 1176) for reuse by the KC-46A mission. The MOB 1 scenario requires four general maintenance hangars for use by the KC-46A aircraft. The USAF determined a three-bay hangar must be constructed in the limited area of ramp space where Buildings 1106 and 1107 are currently situated. The new proposed hangar must accommodate three KC-46A aircraft side-by-side. Hangars 1106 and 1107 do not meet the requirement to accommodate three KC-46A aircraft. Initial engineering analysis determined the use of either or both hangars would require extensive structural modifications.

A.5.4.5 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 3 (Continued)*

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The USAF considered the following methods to accommodate the KC-46A aircraft in existing hangars, as well as alternative site locations. The USAF determined the demolition of Building 1106 is essential for the construction of new hangars to support the KC-46A mission and the alternatives described below would not accommodate the requirements of the new mission.

- Modify Building 1106. This hangar is currently a four-bay maintenance hangar; Spots 1 and 2 are KC-135 nose docks and are not used due to internal obstacles. Spot 3 is the current Isochronal Inspection (ISO) dock; and Spot 4 is available for KC-135 maintenance. None of the four bays is capable of supporting the KC-46A due to insufficient bay length and tail height. One alternative considered was to install an addition or eyebrow with new, taller doors to accommodate the length of the KC-46A aircraft. However, modifications to meet the structural load requirements would entail replacement of many or most of the trusses and possibly many of the support columns (character-defining features of this building type). This work would result in the hangar only accommodating two KC-46A aircraft, one from each side, due to clearance issues.
  - Modifications to the hangar with a new extension or eyebrow to allow sufficient clearance for the KC-46A tail rudder cannot be accomplished without reinforcing the structural integrity of the building substantially. A structural analysis conducted by the USAF concluded the hangar could not support the required modifications. Deficiencies included a high risk of structural failure under snow loads caused by drifting against the proposed higher addition; other loads (such as those associated with cranes, mezzanine, fire protection, and new roofing) would further increase the risk.
  - The hangar, as it exists, is not wide enough to accommodate two KC-46A parked side-by-side with the required clearance.
  - Other modifications would be required, including modifications to the existing hangar bay floor to accommodate the KC-46A jacking points.
  - Other issues include uncertain outcome of extensive structural evaluation to determine structural feasibility of making any other changes; abatement activities required for modification; condition of the structure in relation to required future modifications; and questions regarding the underpinning of some of the existing footings.
- Modify Building 1107. This building is also a four-bay maintenance hangar. Spots 1 and 4 cannot be used for aircraft maintenance due to internal structures supporting an equivalent to four aircraft maintenance units (AMUs). Spots 2 and 3 are open and are used for KC-135 general maintenance. Neither of the two bays will support the KC-46A due to insufficient length and tail rudder height. Initially, modifications to the hangar doors were proposed to allow sufficient clearance for the KC-46A tail rudder. A structural analysis was conducted and concluded the hangar could not support the required modifications.
- Modify Building 1166. This building serves as the primary corrosion control and wash rack hangar. This one-bay hangar is not sufficient for KC-46A aircraft due to insufficient length, width, and height.
- Modify Building 1176N. This building serves as the primary fuel cell hangar. The length and height are not sufficient to accommodate KC-46A aircraft.
- Modify Building 1176S. This building serves as an alternative wash rack. The length and height are not sufficient to accommodate KC-46A aircraft.

- In an effort to seek alternatives to use of the Building 1106 footprint, the team also evaluated alternative site locations for the construction of new hangars. The new hangars need easy access to the parking ramp and/or runway. The area east of the north mass parking area (also clear zone) was selected for the fuels, corrosion control, and single general maintenance hangars. This area had smaller and non-occupied facilities that could be demolished without any adverse effects. These hangar facilities will be constructed as far north on the airfield ramp as possible without extending into the clear zone. The three-bay hangar needs to be located close to these hangars for efficient operations.
- Placing the new three-bay hangar south of Building 1107 would require the demolition of Building 1166 (KC-135 corrosion control), Building 1169 (supply warehouse, transportation management office functions, mobility readiness parts, outdoor storage), Building 1104 (electrical power station), and possibly Building 1108 (alternate mission equipment, snow/deicing). Demolition of these facilities would generate a massive movement of functions and people, new construction to relocate work centers, excessive costs, and unreasonable mission disruption. Also these same facilities were identified to house new KC-46A operations (air transportable galley/latrine/seat pallet facility, fleet servicing, logistics support representatives, Boeing supply area, aircrafts part store, vertical storage). Their demolition would require new construction on base, close to the ramp to satisfy the requirement.
- Moving further south would also require a series of costly facility demolitions and functions' relocations to include Building 1185, which is scheduled to be the Squadron Operations facility for the first Total Force Integration KC-46A squadron at McConnell AFB. The construction of the fuel, corrosion, and single general maintenance hangars on the northeast side of the ramp leaves no other room for the new three-bay hangar.

**Building 1218, Kansas National Guard Armory and Hangar (KHRI inventory # 173-11382)**

**Location.** Building 1218 is centrally located along the east side of the runway. This building was constructed in 1942 and has two components. The larger component on the west side is the hangar and the smaller component on the east side is the armory.

**Description.** The armory component of Building 1218 is a two-story structure with a central courtyard along the west wall of the hangar. The east elevation is demarcated by a centrally placed, protruding, ornamental stone entryway containing double doors. Above the doorway is a large window, over which is carved "Kansas National Guard Armory." Both the north and south elevations have two rows of windows. Between the windows, the building's blond brickwork is accented with five string courses of darker brick.

## A.5.4.5 McConnell AFB NHPA Section 106 SHPO Consultation Letter 3 (Continued)

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The hangar is a one-story, steel-frame structure with steel sash windows and masonry faced with blond brick. It exhibits Art Deco elements such as recessed windows arranged in vertical patterns, horizontal banding, stylized low-relief stone medallions, and relief stone parapet trim. The hangar component of the building has a shallow-pitched gable roof and a brick chimney is situated along the wall adjoining the armory. Both the north and south elevations of the hangar component of Building 1218 have steel and glass straight sliding hangar doors that retract into pockets on either side of the door openings. The character-defining features of the armory component of Building 1218 are:

- “Kansas National Guard” base relief and associated stonework around the main entrance
- Flat, parapet roof
- Stylized carved stone medallions
- Stylized carved stone parapet trim
- Stylized stone coping along roofline
- Downspouts
- Exterior brickwork and limestone (material, design, and color)
- Multi-paned fixed steel windows on hangar
- Stone window sills
- Retractable doors on hangar
- Shallow gable roof on hangar
- Interior glazed tile (treated in a reversible manner; treatment should continue)
- Original doors and wood trim
- Double-loaded corridors and circulation, including stairs (concrete work and woodwork)
- Any remaining original baseboards or trim
- Parachute area

The character-defining features of the hangar component of Building 1218 are:

- Stylized carved stone medallions
- Stylized carved stone parapet trim
- Masonry and brickwork (material, design, and color)
- Multi-paned combination fixed windows
- Multi-paned cantilevered sectional sliding hangar doors
- Definitive brick pilasters between windows on west elevation
- Stone sills

**Condition.** Except for replacement of the original, double-hung windows on the armory component and replacement of the roof on the hangar component, modifications to the exterior of Building 1218 have been minor. As a result, both the armory and the hangar components of Building 1218 retain a high degree of architectural integrity. The interior modifications are for the most part reversible.

**Context/Significance.** During World War II, the aviation component of the Kansas National Guard (later re-designated as KANG) operated out of the Wichita Municipal Airport. Although the KANG armory and hangar were constructed in 1942, World War II activities intervened, and the buildings were not occupied by the KANG until 1947. Other tenants (military and civilian) utilized the armory and hangar between 1942 and 1947. After World War II, the airport

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gradually shifted from commercial to military purposes. In 1953, the City of Wichita formally sold the airfield and its buildings to the USAF. Building 1218 is historically significant for its association with the early presence of the KANG in the City of Wichita and with the growth and development of the Wichita Municipal Airport; for the transition of the building from civilian to military aviation use (De Vore and Ruhl 1995); for the use of stylized Art Deco architectural elements; and for its high degree of architectural integrity. Thus, Building 1218 has been determined to be eligible for inclusion in the NRHP under both Criteria A (MILITARY) and Criteria C (ARCHITECTURE).

**Proposed Action.** Building 1218 currently houses the Operation Support Squadron for the KC-135. As part of the proposed MOB 1 mission, the KC-46A Operations Group staff will be housed in this facility. The existing space within Building 1218 is adequate to support the new staff; however, minor, and reversible, interior renovations would be required to accommodate new Group Command Suites. Interior renovations are primarily wall finishes within the existing offices.

**Determination of Effect.** Because the modifications to the interior of Building 1218 would be reversible, the undertaking would be an effect but not an adverse effect. The character-defining elements of the facility's interior are preserved with office finishes that are reversible. The three long historic corridors, doorways, and stairwells will remain intact with only the wall finishes of interior office spaces being changed. The historical characteristics of this building to include the historic hallways, doorways, and stairwells will be preserved. If required, the doors will be appropriately blocked instead of removed.

**Consideration of Alternatives and Justification for Selection of Building 1218 for Renovation.** Building 1218 is currently being used to house the Operations Support Squadron command staff. In order to keep the same type of functionality, the Operations Group command staff with a Reserve Association for Total Force Integration is to be housed in Building 1218. The Operations Support Squadron will be relocated to Building 1186 to be closer to the other operational flying squadrons.

#### Building 1107 (KHRI # 173-12358)

**Location.** Building 1107 is located on the east side of the runway, at the north end of the ramp. It is parallel to Building 1106 and perpendicular to Building 1176 (the latter also slated for demolition under the proposed action).

**Description.** This hangar is identical to Building 1106. Refer to the description of Building 1106 for details regarding this hangar. In 1961, this hangar was modified as a shop, missile assembly, and maintenance decontamination facility. By 1971, the interior was renovated with multiple partitions and was again renovated and/or rehabilitated several times in the 1980s and 1990s. The open aircraft maintenance space remains largely unaltered, and the



*A.5.4.5 McConnell AFB NHPA Section 106 SHPO Consultation Letter 3 (Continued)*

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cantilevered trusses remain visible. The character-defining features of this hangar are identical to those of Building 1106. Refer to the Building 1106 description for the character-defining features of this hangar.

**Condition.** Building 1107 is in good condition for its current use.

**Context/Significance.** Building 1107 is nationally significant and eligible for listing on the NRHP under Criterion A (MILITARY) for its association with the history of the USAF and the development of McConnell AFB as the primary training facility for the newly designed B-47 bomber aircraft, which was produced at the adjacent Boeing Company plant. It is also significant under Criterion C (ARCHITECTURE) as an excellent example of the double-cantilever medium bomber hangar. This building, along with its twin, Building 1106, retains integrity of location, design, setting, workmanship, materials, feeling, and association, and clearly illustrates the property type and period of construction.

**Proposed Action.** The proposed action includes installation of a telephone system, and fiber optics with data drops and ports for CAT 3 and 5 cabling in the northeast corner of the hangar.

**Determination of Effect.** Modifications to the interior of Building 1107 would be considered an effect but not an adverse effect.

**Consideration of Alternatives and Justification for Selection of Building 1107 for Renovation.** Work on Building 1107 is required due to demolition of Building 1106 and the relocation of the Aircraft Maintenance Unit personnel and operation to Building 1107.

*A.5.4.6 McConnell AFB NHPA Section 106 SHPO Consultation Letter 3 Response*

M\_015\_C\_A-R1

6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615



Kansas Historical Society

phone: 785-272-8681  
fax: 785-272-8682  
cultural\_resources@kshs.org

Sam Brownback, Governor  
Jennie Chinn, Executive Director

KSR&C # 13-06-087  
August 26, 2013

Tina Seemayer  
57830 Pittsburgh, Suite 120  
McConnell AFB KS 67221  
Via email

Re: KC-46 Undertakings at McConnell Air Force Base – Sedgwick County

Dear Ms. Seemayer:

We have reviewed the materials received August 21, 2013 in accordance with 36 CFR Part 800. In reviews of this nature, the SHPO determines whether a federally funded, licensed, or permitted project will adversely affect properties that are listed or determined eligible for listing in the National Register of Historic Places. The SHPO concurs that Hangar 1106 will be adversely affected and that Hangar 1107 and Building 1218 will not be adversely affected. We look forward to further consultation on this project.

Thank you for giving us the opportunity to comment on this proposal. Please refer to the Kansas State Review & Compliance number (KSR&C#) listed above on any future correspondence. Please submit any comments or questions regarding this review to Kim Gant at 785-272-8681, ext. 225 or kgant@kshs.org.

Sincerely,

Jennie Chinn  
State Historic Preservation Officer

Patrick Zollner  
Director, Cultural Resources Division  
Deputy State Historic Preservation Officer

A.5.4.7 McConnell AFB NHPA Section 106 SHPO Consultation Letter 4



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

M\_016\_C\_A

AUG 20 2013

Lt Col Michael A. Freeman  
Commander, 22d Civil Engineer Squadron  
57830 Pittsburgh Street, Suite 120  
McConnell AFB KS 67221


Mr. Reid Nelson, Director  
Office of Federal Agency Programs  
Advisory Council on Historic Preservation  
Old Post Office Building  
1100 Pennsylvania Avenue, NW, Suite 803  
Washington, DC 20004

Dear Mr. Nelson

In accordance with 36 CFR 800.6(a)(1), we are notifying your office regarding an adverse affect finding due to the proposed KC-46A project's impacts at McConnell Air Force Base, Kansas. This project's title is "The Formal Training Unit (FTU) and Main Operating Base 1 (MOB 1) for the Beddown of KC-46A Tank Aircraft" and information on its associated environmental impact statement can be seen at <http://www.kc-46a-beddown.com/index.aspx>. The adverse affect determination letter from 22 CES/CC to Kansas State Historic Preservation Officer is provided as Attachment 1 and includes the documentation required by 36 CFR 800.11 (e). Consultation between McConnell AFB and Kansas SHPO is ongoing.

If the Council wishes to participate in consultation please notify us within 15 days of receipt of this letter. If further information is required, contact Ms. Tina Seemayer, 57830 Pittsburgh, Suite 120, McConnell AFB KS 67221, [tina.seemayer@us.af.mil](mailto:tina.seemayer@us.af.mil), or (316) 759-4445

Sincerely

  
MICHAEL A. FREEMAN, Lt Col, USAF  
Commander

Attachment:  
Adverse Effect Determination Package

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

M\_016\_C\_A

Lt Col Michael A. Freeman  
Commander, 22d Civil Engineer Squadron  
57830 Pittsburgh Street, Suite 120  
McConnell AFB KS 67221

Patrick Zollner  
Deputy SHPO  
Kansas State Historical Society  
6425 SW 6<sup>th</sup> Avenue  
Topeka, KS 66615-1099

Dear Mr. Zollner,

In accordance with 36 CFR 800, "Protection of Historic Properties," we are continuing consultation with your office regarding the proposed KC-46A undertakings at McConnell Air Force Base. Refer to initial consultation letter from 22 CES/CC, 10 Jun 2013, subject line of Consultation on potential KC-46A undertakings at McConnell Air Force Base, KS and your reply KSR&C 13-06-087. In this communication we provide our assessment of adverse effects and would like to initiate consultation to resolve adverse effects (following 800.5 and 800.6 respectively). Documentation per 36 CFR §800.11 is provided in Attachments 1-3.

We applied the criteria of adverse effect and propose adverse effects are anticipated for Hangar 1106 and no adverse effects are anticipated for Hangar 1107 and Building 1218. Your concurrence is requested on this finding of adverse effects.

To resolve these adverse effects, we wish to begin consulting with you to avoid, minimize, or mitigate these effects via development of a Memorandum of Agreement (MOA). Specifically, the anticipated demolition of Hangar 1106 will be of particular focus for the MOA, but we prefer the agreement be comprehensive for all historic properties associated with this project's known or potential adverse impacts. By separate letter we are notifying the Advisory Council on Historic Preservation of this intent to consult (per 800.6(a)(1)). At the earliest opportunity, we would appreciate discussing with you or your staff a schedule for developing an MOA, consulting parties you may suggest for consultation in producing an MOA, and how information is to be provided to the public. We look forward to exploring creative mitigation approaches.

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

A.5.4.7 McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 (Continued)

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For questions on this issue or if further information is required, please contact Tina Seemayer, 57830 Pittsburgh, Suite 120, McConnell AFB KS 67221, (316) 759-4445 or [tina.seemayer@us.af.mil](mailto:tina.seemayer@us.af.mil).

Sincerely

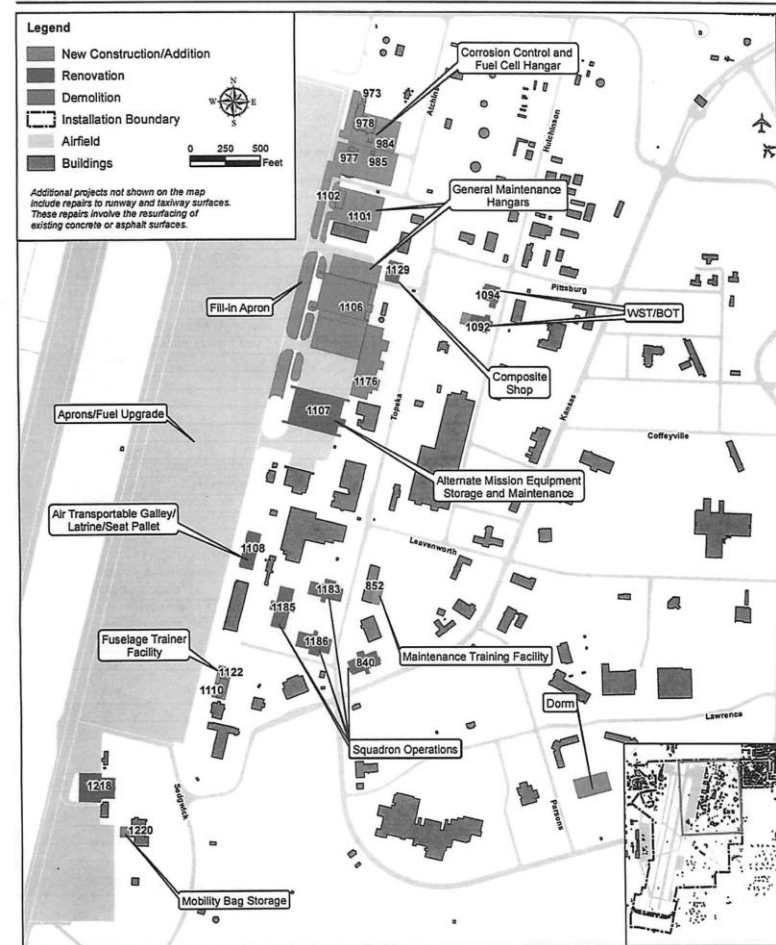


MICHAEL A. FREEMAN, Lt Col, USAF  
Commander

3 Attachments

1. Project locations
2. Building projects Table
3. Effects as known

KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1)



A.5.4.7 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 (Continued)*

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Facilities and Infrastructure Projects  
KC-46A MOB 1 Beddown

Project	Status	Year Constructed
<b>Demolition</b>		
Building 973	Not Eligible KSR&C 13-05-112	1970
Building 977	Not Eligible KSR&C 13-05-112	1977
Building 978	Not Eligible KSR&C 11-08-153/12-03-114	1974
Building 984	Not Eligible KSR&C 13-05-112	1988
Building 985	Not Eligible KSR&C 13-05-112	1987
Building 1101	Not Eligible KSR&C 11-08-153	1991
Building 1102	Not Eligible KSR&C 10-06-094	1987
Building 1106	Eligible	1954
Building 1110	Not Eligible KSR&C 11-05-012/11-08-153	1952
Building 1122	Not Eligible KSR&C 11-08-153	1958
<b>Renovation</b>		
Building 1108 Air Transportable Gallery/Latrine /Seat Pallet Facility	Not Eligible KSR&C 13-05-112	1966
Building 1094, 2/3 Weapon System Trainer and 2 Boom Operator Trainer	Not Eligible KSR&C 13-05-112	1988
Building 1129: Composite Shop	Not Eligible <sup>a</sup> KSR&C 13-05-112	1966
Building 840, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	2003
Building 1183, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	1998
Building 1185, Squadron Operations	Not Eligible <sup>b</sup>	2001
Building 1186, Squadron Operations/Aircrew Flight Equipment	Not Eligible <sup>b</sup>	1999
Building 850, AFRC Wing Headquarters	Not Eligible <sup>b</sup>	1998
Building 1218, Operations Group Headquarters	Eligible	1942
Building 1107, Alternate Mission Equipment/Aircraft Maintenance	Eligible	1954
Building 1108, Fleet Services	Not Eligible KSR&C 13-05-112	1966
Taxiway D Repair	NA	NA
Taxiway F Repair	NA	NA
Apron Fill-In	NA	NA
Roads and Parking Upgrades	NA	NA
<b>Additions/Alterations</b>		
Building 1092, 1 Weapon System Trainer and 1 Boom Operator Trainer	Not Eligible <sup>b</sup>	2000
Building 1220, Mobility Bag Storage Addition	Not Eligible KSR&C 13-05-112	1988
Building 852, Maintenance Training Facility	Not Eligible <sup>b</sup>	1987
Apron Fuels Hydrant Upgrade	NA	NA
<b>New Construction</b>		
Fuel Cell/Corrosion Control Hangar (2-bay)	NA	NA
General Maintenance Hangar (3-bay)+ (1-bay); Maintenance Shops, E/E Shop	NA	NA
Fuselage Trainer Facility	NA	NA
Dormitory	NA	NA

<sup>a</sup> Revaluation to occur in 2016<sup>b</sup> Not Eligible based on the recent construction dates and the lack of significant cultural context

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## Proposed Demolition of Building 1106, Renovations to Buildings 1218 and Building 1107 at McConnell Air Force Base

To meet 36 CFR 800.11 requirements, information is provided below on the proposed demolition of Building 1106 and renovations to Buildings 1218 and 1107 at McConnell AFB as part of the KC-46A First Main Operating Base (MOB 1) mission. Each building description includes the location, condition, and historical context/significance of the structure. The action proposed for each building is described, along with the U.S. Air Force's (USAF's) determination of effect, and the alternatives evaluated as part of the USAF's planning and design process.

## Building 1106 (Kansas Historic Resources Inventory [KHRI] Number 173-12357)



**Location.** Building 1106 is located on the east side of the runway, at the north end of the ramp. It is parallel to Building 1107 and perpendicular to Building 1176.

**Description.** This large aircraft hangar has a front-gable, standing-seam metal roof and vertical metal siding. The north and south elevations have multiple tall, metal, retractable hangar doors. The door pockets at the east and west ends of each façade contain the doors when they are fully open. These pockets are set beyond the east and west walls so when the doors are open, the entire north and south facades are open the full length of the building. The hangar doors have rectangular openings at the top and bottom of each door. Translucent fiberglass panels fill the openings. Two pairs of hangar doors contain round openings to hug the nose or tail of an aircraft which does not completely fit inside the hangar. The interior floors are concrete, and the roof is supported by metal trusses. A large, concrete pavilion at the center of the hangar supports the double cantilever roof trusses.

In 1952, Wilson et al. adapted Plan 39-01-44 (double cantilever) for this building. This plan refers to the steel structural system and not to the doors. This was the third or fourth of eight versions of the double cantilever design used from 1952 to 1957. The steel trusses cantilever from a central core. The hangar was completed in March 1954. The removable metal panels are original to the 1954 design, before the B-1B and KC-135 aircraft arrived at McConnell AFB. This hangar originally accommodated four B-47 aircraft, was subsequently used to accommodate three B-1B aircraft, and currently houses one KC-135 Stratotanker. Modifications to this facility include corrugated metal sides, metal hangar doors, and a standing-seam metal roof. The interior has been renovated and or rehabilitated several times in the 1980s and 1990s through the addition of cubicle spaces. The open aircraft maintenance space remains largely unaltered and the cantilevered trusses remain visible. The character-defining features of this hangar are:

## A.5.4.7 McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 (Continued)

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- Double-cantilevered medium bomber hangar
- Earliest surviving example (with Building 1107) of this hangar type on base
- Exterior as shown on Plan 39-01-44
- Space to service two B-29s, two B-50s, or one B-36
- Characteristic interior-braced steel truss system
- Multi-paneled sliding hangar doors
- Flat exterior roof, arched interior cross-section
- Enameled steel exterior
- Windows
- Round door pockets
- Shallow-gable roof
- Roof structure
- Openness of interior space in hangar
- CMU Office space

**Condition.** Building 1106 is in good condition for its current use.

**Context/Significance.** Building 1106 is nationally significant, and eligible for listing on the National Register of Historic Places (NRHP) under NRHP Criterion A (MILITARY) for its association with the history of the USAF and the development of McConnell AFB as the primary training facility for the newly designed B-47 bomber aircraft, which was assembled at the adjacent Boeing Company plant. This building is also significant under Criterion C (ARCHITECTURE) as an excellent example of the double-cantilever medium bomber hangar. Along with its twin, Building 1107, Building 1106 retains integrity of location, design, setting, workmanship, materials, feeling, and association, and clearly illustrates the property type and period of construction.

**Proposed Action.** Demolition.

**Determination of Effect.** Demolition of this NRHP-eligible building would be considered an adverse effect.

**Consideration of Alternatives and Justification for Selection of Building 1106 for Demolition.** During the site visit to McConnell AFB, a number of alternatives to the demolition of Building 1106 were considered. Some of these alternatives included evaluating the use of other buildings for the new aircraft and the evaluation of alternative siting locations as described below.

The USAF evaluated four hangars (1106, 1107, 1166, and 1176) for reuse by the KC-46A mission. The MOB 1 scenario requires four general maintenance hangars for use by the KC-46A aircraft. The USAF determined a three-bay hangar must be constructed in the limited area of ramp space where Buildings 1106 and 1107 are currently situated. The new proposed hangar must accommodate three KC-46A aircraft side-by-side. Hangars 1106 and 1107 do not meet the requirement to accommodate three KC-46A aircraft. Initial engineering analysis determined the use of either or both hangars would require extensive structural modifications.

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The USAF considered the following methods to accommodate the KC-46A aircraft in existing hangars, as well as alternative site locations. The USAF determined the demolition of Building 1106 is essential for the construction of new hangars to support the KC-46A mission and the alternatives described below would not accommodate the requirements of the new mission.

- Modify Building 1106. This hangar is currently a four-bay maintenance hangar; Spots 1 and 2 are KC-135 nose docks and are not used due to internal obstacles. Spot 3 is the current Isochronal Inspection (ISO) dock; and Spot 4 is available for KC-135 maintenance. None of the four bays is capable of supporting the KC-46A due to insufficient bay length and tail height. One alternative considered was to install an addition or eyebrow with new, taller doors to accommodate the length of the KC-46A aircraft. However, modifications to meet the structural load requirements would entail replacement of many or most of the trusses and possibly many of the support columns (character-defining features of this building type). This work would result in the hangar only accommodating two KC-46A aircraft, one from each side, due to clearance issues.
  - Modifications to the hangar with a new extension or eyebrow to allow sufficient clearance for the KC-46A tail rudder cannot be accomplished without reinforcing the structural integrity of the building substantially. A structural analysis conducted by the USAF concluded the hangar could not support the required modifications. Deficiencies included a high risk of structural failure under snow loads caused by drifting against the proposed higher addition; other loads (such as those associated with cranes, mezzanine, fire protection, and new roofing) would further increase the risk.
  - The hangar, as it exists, is not wide enough to accommodate two KC-46A parked side-by-side with the required clearance.
  - Other modifications would be required, including modifications to the existing hangar bay floor to accommodate the KC-46A jacking points.
  - Other issues include uncertain outcome of extensive structural evaluation to determine structural feasibility of making any other changes; abatement activities required for modification; condition of the structure in relation to required future modifications; and questions regarding the underpinning of some of the existing footings.
- Modify Building 1107. This building is also a four-bay maintenance hangar. Spots 1 and 4 cannot be used for aircraft maintenance due to internal structures supporting an equivalent to four aircraft maintenance units (AMUs). Spots 2 and 3 are open and are used for KC-135 general maintenance. Neither of the two bays will support the KC-46A due to insufficient length and tail rudder height. Initially, modifications to the hangar doors were proposed to allow sufficient clearance for the KC-46A tail rudder. A structural analysis was conducted and concluded the hangar could not support the required modifications.
- Modify Building 1166. This building serves as the primary corrosion control and wash rack hangar. This one-bay hangar is not sufficient for KC-46A aircraft due to insufficient length, width, and height.
- Modify Building 1176N. This building serves as the primary fuel cell hangar. The length and height are not sufficient to accommodate KC-46A aircraft.
- Modify Building 1176S. This building serves as an alternative wash rack. The length and height are not sufficient to accommodate KC-46A aircraft.

A.5.4.7 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 (Continued)*

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- In an effort to seek alternatives to use of the Building 1106 footprint, the team also evaluated alternative site locations for the construction of new hangars. The new hangars need easy access to the parking ramp and/or runway. The area east of the north mass parking area (also clear zone) was selected for the fuels, corrosion control, and single general maintenance hangars. This area had smaller and non-occupied facilities that could be demolished without any adverse effects. These hangar facilities will be constructed as far north on the airfield ramp as possible without extending into the clear zone. The three-bay hangar needs to be located close to these hangars for efficient operations.
- Placing the new three-bay hangar south of Building 1107 would require the demolition of Building 1166 (KC-135 corrosion control), Building 1169 (supply warehouse, transportation management office functions, mobility readiness parts, outdoor storage), Building 1104 (electrical power station), and possibly Building 1108 (alternate mission equipment, snow/deicing). Demolition of these facilities would generate a massive movement of functions and people, new construction to relocate work centers, excessive costs, and unreasonable mission disruption. Also these same facilities were identified to house new KC-46A operations (air transportable galley/latrine/seat pallet facility, fleet servicing, logistics support representatives, Boeing supply area, aircrafts part store, vertical storage). Their demolition would require new construction on base, close to the ramp to satisfy the requirement.
- Moving further south would also require a series of costly facility demolitions and functions' relocations to include Building 1185, which is scheduled to be the Squadron Operations facility for the first Total Force Integration KC-46A squadron at McConnell AFB. The construction of the fuel, corrosion, and single general maintenance hangars on the northeast side of the ramp leaves no other room for the new three-bay hangar.

**Building 1218, Kansas National Guard Armory and Hangar (KHRI inventory # 173-11382)**

**Location.** Building 1218 is centrally located along the east side of the runway. This building was constructed in 1942 and has two components. The larger component on the west side is the hangar and the smaller component on the east side is the armory.

**Description.** The armory component of Building 1218 is a two-story structure with a central courtyard along the west wall of the hangar. The east elevation is

demarcated by a centrally placed, protruding, ornamental stone entryway containing double doors. Above the doorway is a large window, over which is carved "Kansas National Guard Armory." Both the north and south elevations have two rows of windows. Between the windows, the building's blond brickwork is accented with five string courses of darker brick.

The hangar is a one-story, steel-frame structure with steel sash windows and masonry faced with blond brick. It exhibits Art Deco elements such as recessed windows arranged in vertical patterns, horizontal banding, stylized low-relief stone medallions, and relief stone parapet trim. The hangar component of the building has a shallow-pitched gable roof and a brick chimney is situated along the wall adjoining the armory. Both the north and south elevations of the hangar component of Building 1218 have steel and glass straight sliding hangar doors that retract into pockets on either side of the door openings. The character-defining features of the armory component of Building 1218 are:

- "Kansas National Guard" base relief and associated stonework around the main entrance
- Flat, parapet roof
- Stylized carved stone medallions
- Stylized carved stone parapet trim
- Stylized stone coping along roofline
- Downspouts
- Exterior brickwork and limestone (material, design, and color)
- Multi-paned fixed steel windows on hangar
- Stone window sills
- Retractable doors on hangar
- Shallow gable roof on hangar
- Interior glazed tile (treated in a reversible manner; treatment should continue)
- Original doors and wood trim
- Double-loaded corridors and circulation, including stairs (concrete work and woodwork)
- Any remaining original baseboards or trim
- Parachute area

The character-defining features of the hangar component of Building 1218 are:

- Stylized carved stone medallions
- Stylized carved stone parapet trim
- Masonry and brickwork (material, design, and color)
- Multi-paned combination fixed windows
- Multi-paned cantilevered sectional sliding hangar doors
- Definitive brick pilasters between windows on west elevation
- Stone sills

**Condition.** Except for replacement of the original, double-hung windows on the armory component and replacement of the roof on the hangar component, modifications to the exterior of Building 1218 have been minor. As a result, both the armory and the hangar components of Building 1218 retain a high degree of architectural integrity. The interior modifications are for the most part reversible.

**Context/Significance.** During World War II, the aviation component of the Kansas National Guard (later re-designated as KANG) operated out of the Wichita Municipal Airport. Although the KANG armory and hangar were constructed in 1942, World War II activities intervened, and the buildings were not occupied by the KANG until 1947. Other tenants (military and civilian) utilized the armory and hangar between 1942 and 1947. After World War II, the airport

A.5.4.7 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 (Continued)*

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gradually shifted from commercial to military purposes. In 1953, the City of Wichita formally sold the airfield and its buildings to the USAF. Building 1218 is historically significant for its association with the early presence of the KANG in the City of Wichita and with the growth and development of the Wichita Municipal Airport; for the transition of the building from civilian to military aviation use (De Vore and Ruhl 1995); for the use of stylized Art Deco architectural elements; and for its high degree of architectural integrity. Thus, Building 1218 has been determined to be eligible for inclusion in the NRHP under both Criteria A (MILITARY) and Criteria C (ARCHITECTURE).

**Proposed Action.** Building 1218 currently houses the Operation Support Squadron for the KC-135. As part of the proposed MOB 1 mission, the KC-46A Operations Group staff will be housed in this facility. The existing space within Building 1218 is adequate to support the new staff; however, minor, and reversible, interior renovations would be required to accommodate new Group Command Suites. Interior renovations are primarily wall finishes within the existing offices.

**Determination of Effect.** Because the modifications to the interior of Building 1218 would be reversible, the undertaking would be an effect but not an adverse effect. The character-defining elements of the facility's interior are preserved with office finishes that are reversible. The three long historic corridors, doorways, and stairwells will remain intact with only the wall finishes of interior office spaces being changed. The historical characteristics of this building to include the historic hallways, doorways, and stairwells will be preserved. If required, the doors will be appropriately blocked instead of removed.

**Consideration of Alternatives and Justification for Selection of Building 1218 for Renovation.** Building 1218 is currently being used to house the Operations Support Squadron command staff. In order to keep the same type of functionality, the Operations Group command staff with a Reserve Association for Total Force Integration is to be housed in Building 1218. The Operations Support Squadron will be relocated to Building 1186 to be closer to the other operational flying squadrons.

**Building 1107 (KHRI # 173-12358)**

**Location.** Building 1107 is located on the east side of the runway, at the north end of the ramp. It is parallel to Building 1106 and perpendicular to Building 1176 (the latter also slated for demolition under the proposed action).

**Description.** This hangar is identical to Building 1106. Refer to the description of Building 1106 for details regarding this hangar. In 1961, this hangar was modified as a shop, missile assembly, and maintenance decontamination facility. By 1971, the interior was renovated with multiple partitions and was again renovated and/or rehabilitated several times in the 1980s and 1990s. The open aircraft maintenance space remains largely unaltered, and the



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cantilevered trusses remain visible. The character-defining features of this hangar are identical to those of Building 1106. Refer to the Building 1106 description for the character-defining features of this hangar.

**Condition.** Building 1107 is in good condition for its current use.

**Context/Significance.** Building 1107 is nationally significant and eligible for listing on the NRHP under Criterion A (MILITARY) for its association with the history of the USAF and the development of McConnell AFB as the primary training facility for the newly designed B-47 bomber aircraft, which was produced at the adjacent Boeing Company plant. It is also significant under Criterion C (ARCHITECTURE) as an excellent example of the double-cantilever medium bomber hangar. This building, along with its twin, Building 1106, retains integrity of location, design, setting, workmanship, materials, feeling, and association, and clearly illustrates the property type and period of construction.

**Proposed Action.** The proposed action includes installation of a telephone system, and fiber optics with data drops and ports for CAT 3 and 5 cabling in the northeast corner of the hangar.

**Determination of Effect.** Modifications to the interior of Building 1107 would be considered an effect but not an adverse effect.

**Consideration of Alternatives and Justification for Selection of Building 1107 for Renovation.** Work on Building 1107 is required due to demolition of Building 1106 and the relocation of the Aircraft Maintenance Unit personnel and operation to Building 1107.

A.5.4.8 *McConnell AFB NHPA Section 106 SHPO Consultation Letter 4 Response*



M-016\_C\_A-R1

September 25, 2013

Lieutenant Colonel Michael A. Freeman  
Commander, 22d Civil Engineer Squadron  
57830 Pittsburgh Street  
Suite 120  
McConnell Air Force Base, KS 67221

*Ref: Demolition of Building 1106 and Renovations to Buildings 1218 and 107 as Part of the Proposed  
Formal Training Unit (FTU) and First Main Operating Base (MOB 1) for KC-46A Tanker Beddown  
Sedgwick County, McConnell Air Force Base*

Dear Lt Col Freeman:

On August 30, 2013, the Advisory Council on Historic Preservation (ACHP) received your notification and supporting documentation regarding the potential adverse effects of the referenced undertaking on a property or properties listed or eligible for listing in the National Register of Historic Places. Based upon the information you provided, we have concluded that Appendix A, Criteria for Council Involvement in Reviewing Individual Section 106 Cases, of our regulations, "Protection of Historic Properties" (36 C.F.R. Part 800), does not apply to this undertaking. Accordingly, we do not believe that our participation in the consultation to resolve adverse effects is needed.

However, if we receive a request for participation from the Kansas State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer, affected Indian tribe, a consulting party, or other party, we may reconsider this decision. Additionally, should circumstances change, and you determine that our participation is needed to conclude the consultation process, please notify us.

Pursuant to 36 C.F.R. § 800.6(b)(1)(iv), you will need to file the final agreement document, developed in consultation with the Kansas SHPO and any other consulting parties, and related documentation with the ACHP at the conclusion of the consultation process. The filing of the agreement document and supporting documentation with the ACHP is required in order to complete the requirements of Section 106 of the National Historic Preservation Act.

Please be advised that the ACHP is aware that the FTU and MOB1 for KC-46A Tanker Beddown is a broader initiative for the Department of the Air Force and multiple installations are being considered. With this in mind the ACHP is recommending to all of the installations identified to develop Programmatic Agreements (PA) in accordance with 36 C.F.R. § 800.14(b)(3) in lieu of Memoranda of Agreement. A PA will provide greater flexibility for the installation to meet Section 106 responsibilities given the uncertainty of the final FTU and MOB1 locations.

ADVISORY COUNCIL ON HISTORIC PRESERVATION  
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004  
Phone: 202-606-8503 • Fax: 202-606-8647 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

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Thank you for providing us with your notification of adverse effect. If you have any questions or require our further assistance, please contact Ms. Katharine R. Kerr at (202) 606-8534 or via e-mail at [kkerr@achp.gov](mailto:kkerr@achp.gov).

Sincerely,

Caroline D. Hall  
Assistant Director  
Office of Federal Agency Programs  
Federal Property Management Section

*A.5.4.9 MOA between McConnell AFB and the Kansas SHPO Regarding the KC-46A MOB 1*

**MEMORANDUM OF AGREEMENT  
BETWEEN McCONNELL AIR FORCE BASE AND  
THE KANSAS STATE HISTORIC PRESERVATION OFFICER  
REGARDING THE KC-46A MAIN OPERATING BASE PROJECT LOCATED AT  
McCONNELL AFB, KANSAS**

**WHEREAS**, the KC-46A project establishes a First Main Operating Base (MOB 1) to provide a fully capable, combat operational KC-46A aerial refueling force to accomplish aerial refueling and related missions; and, bedding down and operating the KC-46A allows the U.S. Air Force (USAF) to maintain combat capability and mission readiness as U.S. military resources become increasingly committed to missions throughout the world; and, Congress is funding the KC-46A to update the USAF's current aerial refueling fleet; and, by 2028 the KC-46A replaces a substantial portion of the KC-135 fleet to correct deficiencies, update the fleet, enhance operations, and increase mission effectiveness; and

**WHEREAS**, for the KC-46A project's Formal Training Unit function proposed at McConnell Air Force Base, Kansas (hereafter, "the Base"), the Kansas State Historic Preservation Officer (SHPO) has concurred in a finding of no historic properties affected, in accordance with Section 106 of the *National Historic Preservation Act* (NHPA), as amended, 16 U.S.C. 470, and its implementing regulations (36 C.F.R. Part 800); and

**WHEREAS**, as part of the KC-46A project the USAF proposes to demolish the Base's Building 1106, a hangar eligible for listing in the National Register of Historic Places, and to conduct certain activities potentially causing an effect to other historic properties at the Base; and an Area of Potential Effect (APE) map for the total project area associated with the Base is Attachment 1 to this agreement;

**WHEREAS**, the Base has determined other aspects of the MOB undertaking, including demolition of Buildings 973, 977, 978, 984, 985, 1101, 1102, 1110, and 1122; modifications to Buildings 840, 850, 852, 1092, 1094, 1108, 1129, 1183, 1185, 1186, and 1220, and pavements; and new construction of a one-bay hangar, a two-bay hangar, a three-bay hangar, a fuselage trainer and a dormitory are within the APE but will not result in effects to historic properties and the SHPO has concurred with these findings; and

**WHEREAS**, the Base determined the demolition of Building 1106 is an undertaking constituting an adverse effect, and consulted with the SHPO in accordance with Section 106 of NHPA, as amended, 16 U.S.C. 470, and its implementing regulations (36 C.F.R. Part 800); and

**WHEREAS**, the Base determined other aspects of the MOB 1 undertaking may have potential for causing effects to other historic properties, particularly Buildings 1107 and 1218, with such effects unknown at present but with continued protection possible if certain conditions are followed, and

**WHEREAS**, the Base notified the Advisory Council on Historic Preservation (Council) pursuant to 36 C.F.R. § 800.6 regarding resolution of adverse effects and provided documentation specified in 36 C.F.R. § 800.11(e), and the Council declined to join consultation; and

**WHEREAS**, while the Base and APE exhibit no historic properties of known religious or cultural importance to federally-recognized tribes, the tribes listed in Attachment 2 to this MOA were considered potentially interested in the MOB 1 presuming such properties potentially yet might exist in the APE, and these tribes either did not reply to communications from the Base or they responded to decline participation in this agreement; and

**NOW, THEREFORE**, the Base and the SHPO agree the proposed undertaking shall be administered in accordance with the following stipulations to satisfy the Base's NHPA Section 106 responsibilities.

**Stipulations**

The Base will ensure the following measures are carried out:

**I. Mitigation for Demolition of Building 1106**

- A. The Base will provide materials for interpretive use by the Kansas Aviation Museum, Wichita, Kansas in a "Military Aviation in Kansas" display. The materials may be photos, drawings, and/or historic summaries related to aviation at the Base. The Base is willing to provide these materials which the Museum has expressed interest in displaying. Upon submittal of the full package, and receipt by the Museum, the materials become property of the Museum.
- B. The Base will provide cultural resources related materials to the Wichita State University Libraries (the Library), Special Collections and University Archives, Wichita, Kansas; the SHPO will receive electronic copies of the materials. The source of materials is the Base Historic Records files and includes documents, photos, and/or drawings related to cultural resources at the Base. Examples include historic inventory reports, historic summaries, historic aerial photos, and limited original building elevation drawings of historic facilities. The Base is willing to provide these materials which the Library has expressed interest in displaying.
- C. The Base will ensure production of a "web page" suitable for internet posting, and a brochure useful for general distribution/accessibility to educate non-technical audiences within and beyond the Base. These products will focus on the Base's history in general, and also incorporate historic buildings and their pertinent immediate and broader settings.

**II. Preservation of Buildings 1107 and 1218**

- A. To ensure the MOB 1 does not adversely affect these buildings, the Base shall ensure all phases of design, construction, and maintenance/operation of the buildings follow applicable provisions of *The Secretary of the Interior's Standards for the Treatment of*

#### A.5.4.9 MOA between McConnell AFB and the Kansas SHPO Regarding the KC-46A MOB 1 (Continued)

*Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings* ("Standards"; 36 C.F.R. Part 68).

- B. The Base will provide opportunities for the SHPO to review and comment on key steps of MOB 1 related design for the buildings.
- C. The Base will require all parties, including contractors, involved with design, construction, and maintenance/operation of the buildings follow the Standards.
- D. Where an individual or team involved in the buildings' design, construction, and maintenance/operation reasonably would be expected to meet professional standards associated with the Standards, the Base will ensure such standards are met (see also Stipulation III).
- E. Should preservation and protection of Buildings 1107 and 1218 become unfeasible, the Base will at the earliest opportunity consult the SHPO to assess effects, resolve adverse effects including development of mitigation plan(s) if necessary, and amend this MOA to reflect such actions.

#### III. Professional Standards

All critical work pursuant to this MOA will be conducted under the responsibility of person(s) meeting the Secretary of the Interior's *Historic Preservation Professional Qualification Standards* (Federal Register Vol. 62, No. 119, pp. 33719). The Base will identify this person, or persons, at the time the MOA is executed, but may change or add to such designation(s) in the future by providing written notice to the SHPO.

#### IV. Submittals

The following submittals do not include the reports listed in Stipulation V.

- A. The Base will submit interpretive materials for the Kansas Aviation Museum display "Military Aviation in Kansas" no later than 30 Dec 2013. Materials submitted will be reported per Stipulation V.
- B. The Base will submit materials to entities described in Stipulation I.B no later than (NLT) 30 Jun 2016. Materials submitted will be reported per Stipulation V.
- C. The Base will provide the products described in Stipulation I.C NLT 30 Jun 2015. Materials developed will be reported per Stipulation V.

#### V. Reporting Requirements

The following describes reporting associated with this agreement.

- A. During the period this MOA remains current (i.e. not expired) the Base will provide to the SHPO updates by email transmitted at working staff level every 90 days. These updates will start at the beginning of the first full month following both parties' execution of the MOA.
- B. For the duration of this MOA, the Base will provide the SHPO an annual report summarizing activities to date under this MOA. The annual report will be year by year starting from the last (i.e. latest) signatory date concluding all parties' execution of the

MOA. The annual report will be produced in a written, professional format, including photographs or other illustrations as necessary, and otherwise describe in reasonable detail all key related activities, submittals, issues, etc. The final annual report (i.e. prior to expected MOA termination) will include a lessons learned section to benefit future similar efforts by the USAF, the Base, and the SHPO. For any annual report the SHPO's comments offered in response to the report will become an attachment to the report filed at the Base. The Base may choose to amend any given annual report following receipt of SHPO comments (if any). If SHPO's comments for a given annual report include recommendations for amendment to this MOA, the Base and the SHPO will address that following Stipulation VII of this agreement.

#### VI. Dispute Resolution

Should either signatory party, the Base or the SHPO, to this MOA object at any time to any actions proposed or the manner in which the terms of this MOA are implemented, the concerned party shall consult with the other party to resolve the objection. If the Base determines that such objection cannot be resolved, the Base will engage the following matters.

- A. Forward all documentation relevant to the dispute, including the Base's proposed resolution, to the Council. The Council shall provide the Base with its advice on the resolution of the objection within thirty (30) days of receiving adequate documentation. Prior to reaching a final decision on the dispute, the Base shall prepare a written response that takes into account any timely advice or comments regarding the dispute from the Council and the SHPO, and provide them with a copy of this written response. The Base then will proceed according to its final decision.
- B. If the Council does not provide its advice regarding the dispute within the thirty (30) day period, the Base may make a final decision on the dispute and proceed accordingly. Prior to reaching such a final decision, the Base shall prepare a written response that takes into account any timely comments regarding the dispute from the SHPO, and provide the SHPO and the Council with a copy of such written response.
- C. The Base's responsibility remains unchanged to carry out all other actions subject to terms of this MOA that are not the subject of the dispute.

#### VII. Amendment

This MOA may be amended when such an amendment is agreed to in writing by both signatories. The amendment will be effective on the date a copy signed by both signatories is filed with the Council.

#### VIII. Termination

- A. This agreement expires on the date specified in Stipulation X.
- B. This agreement may be terminated prior to expiration if both parties agree via exchange of formal letters that all stipulations are fulfilled.
- C. If either signatory to this MOA determines its terms will not or cannot be carried out, that party shall immediately consult with the other party to attempt to develop an amendment

A.5.4.9 MOA between McConnell AFB and the Kansas SHPO Regarding the KC-46A MOB 1 (Continued)

per Stipulation VII. If within thirty days an amendment cannot be reached, any signatory may terminate the MOA upon written notification to the other signatory.

- D. The Base will consult pursuant to 36 C.F.R. Part 800 on all remaining MOB 1 undertakings covered by this MOA and not completed at the time of termination.

IX. Anti-Deficiency Act

All requirements set forth in this MOA requiring the expenditure of USAF funds are expressly subject to the availability of appropriations and the requirements of the Anti-Deficiency Act (31 U.S.C. Section 1341). No obligation undertaken by USAF under the terms of this MOA will require or be interpreted to require a commitment to expend funds not obligated for a particular purpose.

- A. If the Base cannot perform certain obligations set forth in the MOA due to the unavailability of funds, the Base and SHPO will strive for the remainder of the agreement to be executed.
- B. In the event that any obligation under the MOA cannot be performed due to the unavailability of funds, the Base agrees to utilize its best efforts to renegotiate the funding provision, and it may initiate consultation to develop a related amendment to this MOA.

X. Duration

This MOA shall become effective upon execution by the Base and the SHPO, and it shall remain in effect five (5) years from the latest signatory date of that execution, or to a date extended by Stipulation VII.

EXECUTION AND IMPLEMENTATION of this MOA evidences the Base has satisfied their Section 106 responsibilities for the KC-46A MOB 1 undertaking at the Base.

McCONNELL AFB, KANSAS

  
JOEL D. JACKSON, Colonel, USAF  
Commander, 22d Air Refueling Wing

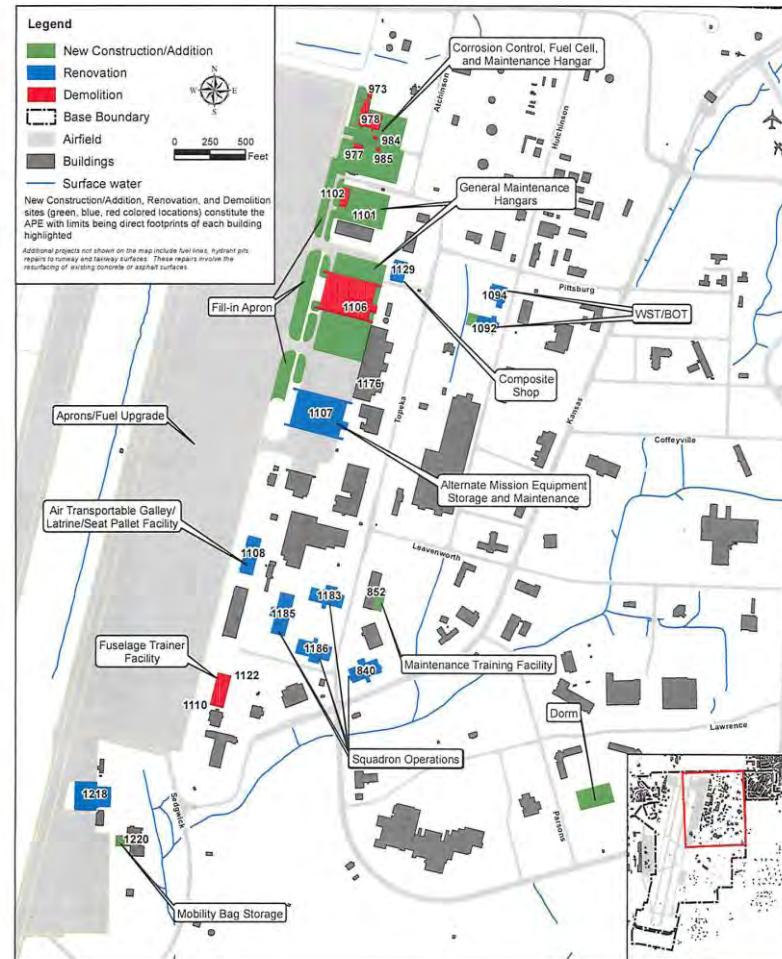
5 DEC 13  
Date:

KANSAS STATE HISTORIC PRESERVATION OFFICER

  
PATRICK ZÖLLNER  
Deputy State Historic Preservation Officer

12-13-13  
Date:

Attachment 1, KC-46A Formal Training Unit and First Main Operating Base Beddown  
Area of Potential Effect Regarding National Historic Preservation Act, Section 106



*A.5.4.9 MOA between McConnell AFB and the Kansas SHPO Regarding the KC-46A MOB 1 (Continued)*

**ATTACHMENT 2**

**FEDERALLY RECOGNIZED TRIBES COMMUNICATED TO  
FOR THE KC-46A MAIN OPERATING BASE PROJECT  
LOCATED AT McCONNELL AFB, KANSAS**

Caddo Nation of Oklahoma  
Cherokee Nation  
Cheyenne - Arapaho Tribes of Oklahoma  
Chickasaw Nation  
Comanche Nation  
Iowa Tribe of Kansas and Nebraska  
Kaw Nation  
Kickapoo Tribe of Indians of the Kickapoo Reservation in Kansas  
Kiowa Indian Tribe of Oklahoma  
Osage Tribal Council  
Sac & Fox Nation of Missouri in Kansas and Nebraska  
Wichita and Affiliated Tribes

*A.5.4.10 ACHP Response to MOA between McConnell AFB and the Kansas SHPO Regarding the KC-46A MOB 1*



February 6, 2014

Lieutenant Colonel Michael A. Freeman  
Commander, 22d Civil Engineer Squadron  
57830 Pittsburgh Street  
Suite 120  
McConnell Air Force Base, KS 67221

*Ref: Demolition of Building 1106 and Renovations to Buildings 1218 and 107 as Part of the Proposed  
Formal Training Unit (FTU) and First Main Operating Base (MOB 1) for KC-46A Tanker Beddown  
Sedgwick County, McConnell Air Force Base*

Dear Lt. Col. Freeman:

On February 3, 2014, the Advisory Council on Historic Preservation (ACHP) received the Memorandum of Agreement (MOA) for the above referenced project. In accordance with Section 800.6(b)(1)(iv) of the ACHP's regulations, the ACHP acknowledges receipt of the MOA. The filing of the MOA, and execution of its terms, completes the requirements of Section 106 of the National Historic Preservation Act and the ACHP's regulations.

We appreciate you providing us with a copy of this MOA and will retain it for inclusion in our records regarding this project. Should you have any questions or require additional assistance, please contact Katharine Kerr at 202-606-8534, or via email at [kkerr@achp.gov](mailto:kkerr@achp.gov).

Sincerely,



Raymond V. Wallace  
Historic Preservation Technician  
Office of Federal Agency Programs

ADVISORY COUNCIL ON HISTORIC PRESERVATION  
1100 Pennsylvania Avenue NW, Suite 803 • Washington, DC 20004  
Phone: 202-606-8503 • Fax: 202-606-8647 • [achp@achp.gov](mailto:achp@achp.gov) • [www.achp.gov](http://www.achp.gov)

## A.6 NATURAL RESOURCES CONSULTATION

### A.6.1 Altus AFB Natural Resources Consultation Letter

A\_001\_B\_A

A\_001\_B\_A



DEPARTMENT OF THE AIR FORCE  
97TH AIR MOBILITY WING  
ALTUS AIR FORCE BASE OKLAHOMA

18 Jun 13

Mr. Brian T. Drake  
Deputy Base Civil Engineer  
97th Civil Engineer Squadron  
401 L Ave  
Altus AFB OK 73523-5138

Dr. Todd Fagin, ONHI Biotics Administrator  
Oklahoma Natural Heritage Inventory  
Oklahoma Biological Survey  
111 East Chesapeake Street  
Norman, OK 73019-0575

Dear Dr. Fagin,

The United States Air Force is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Altus AFB has been selected as an alternative for either the FTU mission or the MOB 1 mission. The base would not receive both missions.

The beddown for the FTU would include up to eight KC-46A tanker aircraft for one squadron at one base; and the beddown for the MOB 1 of 36 KC-46A aircraft for three squadrons at one base. The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements vary between the FTU and MOB 1 mission but all improvements would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base in previously developed areas, all at Altus AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The Air Force has identified threatened and endangered species that could occur near Altus AFB and will be evaluated in the EIS (Table 1). This list is based on a review of recent biological surveys conducted at Altus AFB and other information obtained from the U.S Fish and Wildlife Service website and the Oklahoma Natural Heritage Inventory website.

The Air Force requests your agency's concurrence with the species list contained in Table 1. If your agency has any new or additional information other than that contained in Table 1, we request that you please provide comments by 01 July 2013.

**Table 1. Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the Endangered Species Act**

Common Name	Scientific Name	Status		Occurrence at Altus AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
Birds				
Piping plover	<i>Charadrius melodus</i>	FC, MBTA	-	No
Whooping crane	<i>Grus americana</i>	FE, MBTA	-	No
Interior least tern	<i>Sterna antillarum</i>	FE, MBTA	-	No
Key:		FC=Candidate for Federal listing		
<sup>a</sup> U.S. Fish and Wildlife Service		FE=Listed as endangered under ESA		
<sup>b</sup> Oklahoma Department of Wildlife Conservation		MBTA=Protected under Migratory Bird Treaty Act		
Sources:				
Altus AFB, 2009. Integrated Natural Resources Management Plan. Department of the Air Force 97th Air Mobility Wing (AETC), Altus AFB, Oklahoma.				
Oklahoma Department of Wildlife Conservation (OKWC), 2013. County by County List of Endangered and Threatened Species. Accessed 06 May 2013 from <a href="http://www.wildlifedepartment.com/wildlifemgmt/endangered/State_Listed_by_County.pdf">http://www.wildlifedepartment.com/wildlifemgmt/endangered/State_Listed_by_County.pdf</a> .				
U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>				

Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN, Bldg 171, 2261 Hughes Ave, Ste 155, Lackland AFB TX 78236-9853-5022 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

Sincerely,

BRIAN T. DRAKE, GS-14, DAF  
Deputy Base Civil Engineer

*A.6.1.1 Altus AFB Natural Resources Consultation Response*

A\_001\_B\_A-R1

**From:** [Bresnan, Sarah E.](#)  
**To:** [Bresnan, Sarah E.](#)  
**Subject:** RE: KC-46A FTU and MOB 1 EIS  
**Date:** Tuesday, June 25, 2013 8:24:46 AM

---

-----Original Message-----

From: Fagin, Todd D. [<mailto:tfagin@ou.edu>]  
Sent: Friday, June 21, 2013 2:18 PM  
To: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Subject: KC-46A FTU and MOB 1 EIS

OBS Ref. 2013-246-FED-AIR

Dear Ms. Reynolds,

We have reviewed occurrence information on federal and state threatened, endangered or candidate species, as well as non-regulatory rare species and ecological systems of importance currently in the Oklahoma Natural Heritage Inventory database for the following location you provided:

Altus Air Force Base

Portions of Sec. 2, 10, 11, 12, 13, 14, 15-T2N20W and Sec. 35-T3N35W, Jackson County

We found no occurrence(s) of relevant species within the vicinity of the project location as described. However, absence from our database does not preclude such species from occurring in the area.

If you have any questions about this response, please send me an email, or call us at the number given below.

Although not specific to your project, you may find the following links helpful.

ONHI guide to ranking codes for endangered and threatened species:  
[http://vmpincel.ou.edu/heritage/ranking\\_guide.html](http://vmpincel.ou.edu/heritage/ranking_guide.html)  
<[http://vmpincel.ou.edu/heritage/ranking\\_guide.html](http://vmpincel.ou.edu/heritage/ranking_guide.html)>

Information regarding the Oklahoma Natural Areas Registry:  
[http://www.oknaturalheritage.ou.edu/registry\\_faq.htm](http://www.oknaturalheritage.ou.edu/registry_faq.htm)  
<[http://www.oknaturalheritage.ou.edu/registry\\_faq.htm](http://www.oknaturalheritage.ou.edu/registry_faq.htm)>

Todd Fagin

Oklahoma Natural Heritage Inventory/

Department of Geography and Environmental Sustainability

## A.6.2 Fairchild AFB Natural Resources Consultation Letters

### A.6.2.1 Fairchild AFB Natural Resources Consultation Letter 1

F\_001\_B\_A

F\_001\_B\_A



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 92D AIR REFUELING WING (AMC)  
FAIRCHILD AIR FORCE BASE WASHINGTON

Lt Col Jason S. Campbell  
Commander  
100 W. Ent Street, Suite 100  
Fairchild AFB, WA 99011

Russ McRae/Office Manager  
U.S. Fish & Wildlife Service  
Eastern Washington Field Office  
11103 E. Montgomery Drive  
Spokane, WA 99206

Dear Mr. McRae,

The United States Air Force is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Fairchild AFB has been selected as an alternative for the MOB 1 mission.

The beddown for the MOB 1 mission would include 36 KC-46A aircraft for three squadrons. The selected basing location would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements for the MOB 1 mission would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base in previously developed areas, all on Fairchild AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

The Air Force has identified threatened and endangered species that could occur near Fairchild and will be evaluated in the EIS (Table 1). This list is based on a review of recent biological surveys conducted at Fairchild AFB and other information obtained from the U.S. Fish and Wildlife Service website and the Washington Department of Natural Resources website.

The Air Force requests your agency's concurrence with the species list contained in Table 1. If your agency has any new or additional information other than that contained in Table 1, we request that you please provide comments by 01 July 2013. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022 or to the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com). Thank you for your assistance in this matter.

Sincerely,

JASON S. CAMPBELL, Lt Col, USAF  
Commander, 92d Civil Engineer Squadron

20 JUN 2013

**Table 1. Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the Endangered Species Act**

Common Name	Scientific Name	Status		Occurrence at Fairchild AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
BIRDS				
American white pelican	<i>Pelicanus erythrorhynchus</i>	MBTA	SE	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted, BGEPA	SS	Yes
Black-backed woodpecker	<i>Picoides arcticus</i>	MBTA	SC	No
Burrowing owl	<i>Athene cunicularia</i>	MBTA	SC	No
Ferruginous hawk	<i>Buteo regalis</i>	MBTA	ST	No
Flammulated owl	<i>Otus flammeolus</i>	-	SC	No
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA	SC	Yes
Lewis' woodpecker	<i>Melanerpes lewis</i>	MBTA	SC	No
Loggerhead shrike	<i>Lanius ludovicianus</i>	MBTA	SC	No
Merlin	<i>Falco columbianus</i>	MBTA	SC	No
Northern goshawk	<i>Accipiter gentilis</i>	MBTA	SC	No
Pileated woodpecker	<i>Drycopus pileatus</i>	MBTA	SC	No
Sage sparrow	<i>Amphispiza belli</i>	MBTA	SC	No
Sage thrasher	<i>Oreoscoptes montanus</i>	MBTA	SC	No
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	-	ST	No
Upland Sandpiper	<i>Bartramia longicauda</i>	MBTA	SE	No
Vaux's swift	<i>Chaetura vauxi</i>	MBTA	SE	No
Western grebe	<i>Aechmophorus occidentalis</i>	MBTA	SC	No
FISH				
Bull trout	<i>Salvelinus confluentus</i>	FT	-	No
MAMMALS				
Black-tailed jackrabbit	<i>Lepus californicus</i>	-	SC	No
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	-	SC	No
Washington ground squirrel	<i>Spermophilus washingtoni</i>	FC	SC	No
White-tailed jackrabbit	<i>Lepus townsendii</i>	-	SC	No
REPTILES/AMPHIBIANS				
Boreal toad	<i>Bufo boreas</i>	-	SC	No
Columbia spotted frog	<i>Rana luteiventris</i>	-	SC	Yes
Northern leopard frog	<i>Rana pipens</i>	-	SE	No
INVERTEBRATES				
Juniper hairstreak	<i>Mitoura grynea barryi</i>	-	SC	No
Mann's mollusk-eating	<i>Scaphinotus manni</i>	-	SC	No

## A.6.2.1 Fairchild AFB Natural Resources Consultation Letter 1 (Continued)

F\_001\_B\_A

Common Name	Scientific Name	Status		Occurrence at Fairchild AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
ground beetle		-		
Shepherd's parnassian	<i>Parnassius clodius shepherdii</i>	-	SC	No
Silver-bordered fritillary	<i>Boloria selene atrocotalis</i>	-	SC	No
PLANTS				
American pillwort	<i>Pilularia americana</i>	-	ST	Yes
Austin's knotweed	<i>Polygonum austini</i>	-	ST	No
Dwarf rush	<i>Juncus hemiendytus</i> var. <i>hemiandytus</i>	-		No
Grand redstem	<i>Ammannia robusta</i>	-	ST	No
Howellia	<i>Howellia aquatilis</i>	FT	ST	No
Lowland toothcup	<i>Rotala ramosior</i>	-	ST	No
Northwestern yellowflax	<i>Sclerolimon digynum</i>	-	ST	Yes
Palouse goldenweed	<i>Haplopappus liatriformis</i>	-	ST	No
Rocky Mountain bulrush	<i>Scirpus saximontanus</i>	-	ST	No
Spalding's catchfly	<i>Silene spaldingii</i>	FT	ST	Yes
Yellow lady's-slipper	<i>Cypripedium parviflorum</i>	-	ST	No
Key: <sup>a</sup> U.S. Fish and Wildlife Service <sup>b</sup> Washington Department of Fish and Wildlife and the Washington Department of Natural Resources		FE=Listed as endangered under ESA FT=Listed as threatened under ESA FC=Candidate for Federal listing SE=State listed as endangered ST=State listed as threatened SC=Candidate for state listing SS=State listed sensitive species MBTA=Protected under Migratory Bird Treaty Act BGEPA= Protected under the Bald and Golden Eagle Protection Act		
Sources: Fairchild Air Force Base (AFB), 2012. <i>Fairchild Air Force Base Integrated Natural Resources Management Plan 2012-2016</i> . January 2012.  U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>  Washington Department of Fish and Wildlife 2013. (WDFG), 2013. Priority Habitats and Species List, Distribution by County. Accessed 06 May 2013 from <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>  Washington Department of Natural Resources (WDNR), 2012. Accessed 06 May 2013 from <a href="http://www.dnr.wa.gov/Pages/default.aspx">http://www.dnr.wa.gov/Pages/default.aspx</a>				

*A.6.2.2 Fairchild AFB Natural Resources Consultation Letter 1 Response*

F\_001\_B\_A-R1

**From:** Warren, Chris [mailto:chris\_warren@fws.gov]  
**Sent:** Wednesday, January 15, 2014 10:18 AM  
**To:** ADAMS, DANIELLE D GS-12 USAF AMC 92 CES/CEIE  
**Cc:** Michelle Eames; Russ MacRae  
**Subject:** KC-46A Formal Training Unit and First Main Operating Base Beddown EIS

Danielle,

Thank you for the opportunity to review the KC-46A Formal Training Unit and First Main Operating Base Beddown EIS and for holding public meetings to further describe the programs. We have no comments on the information presented.

Chris Warren  
Eastern Washington Field Office  
U.S. Fish and Wildlife Service  
11103 East Montgomery Drive  
Spokane, Washington 99206  
Phone: (509) 893-8020

## A.6.2.3 Fairchild AFB Natural Resources Consultation Letter 2

F\_002\_B\_A

F\_002\_B\_A



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 92D AIR REFUELING WING (AMC)  
FAIRCHILD AIR FORCE BASE WASHINGTON

20 JUN 2013

Lt Col Jason S. Campbell  
Commander  
100 W. Ent Street, Suite 100  
Fairchild AFB, WA 99011

John Gamon /Program Manager  
Washington Natural Heritage Program  
Dept. of Natural Resources  
PO Box 47014  
Olympia, WA 98504-7014

Dear Mr. Gamon,

The United States Air Force is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Fairchild AFB has been selected as an alternative for the MOB 1 mission.

The beddown for the MOB 1 mission would include 36 KC-46A aircraft for three squadrons. The selected basing location would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements for the MOB 1 mission would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base in previously developed areas, all on Fairchild AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The Air Force has identified threatened and endangered species that could occur near Fairchild and will be evaluated in the EIS (Table 1). This list is based on a review of recent biological surveys conducted at Fairchild AFB and other information obtained from the U.S Fish and Wildlife Service website and the Washington Department of Natural Resources website.

The Air Force requests your agency's concurrence with the species list contained in Table 1. If your agency has any new or additional information other than that contained in Table 1, we request that you please provide comments by 01 July 2013. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

Sincerely,

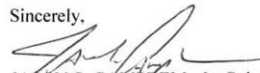
  
JASON S. CAMPBELL, Lt Col, USAF  
Commander, 92d Civil Engineer Squadron

Table 1. Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the Endangered Species Act

Common Name	Scientific Name	Status		Occurrence at Fairchild AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
BIRDS				
American white pelican	<i>Pelicanus erythrorhynchus</i>	MBTA	SE	No
Bald eagle	<i>Haliaeetus leucocephalus</i>	Delisted, BGEPA	SS	Yes
Black-backed woodpecker	<i>Picoides arcticus</i>	MBTA	SC	No
Burrowing owl	<i>Athene cunicularia</i>	MBTA	SC	No
Ferruginous hawk	<i>Buteo regalis</i>	MBTA	ST	No
Flammulated owl	<i>Otus flammeolus</i>	-	SC	No
Golden eagle	<i>Aquila chrysaetos</i>	BGEPA	SC	Yes
Lewis' woodpecker	<i>Melanerpes lewis</i>	MBTA	SC	No
Loggerhead shrike	<i>Lanius ludovicianus</i>	MBTA	SC	No
Merlin	<i>Falco columbianus</i>	MBTA	SC	No
Northern goshawk	<i>Accipitor gentilis</i>	MBTA	SC	No
Pileated woodpecker	<i>Drycopus pileatus</i>	MBTA	SC	No
Sage sparrow	<i>Amphispiza belli</i>	MBTA	SC	No
Sage thrasher	<i>Oreoscoptes montanus</i>	MBTA	SC	No
Sharp-tailed grouse	<i>Tympanuchus phasianellus</i>	-	ST	No
Upland Sandpiper	<i>Bartramia longicauda</i>	MBTA	SE	No
Vaux's swift	<i>Chaetura vauxi</i>	MBTA	SE	No
Western grebe	<i>Aechmophorous occidentalis</i>	MBTA	SC	No
FISH				
Bull trout	<i>Salvelinus confluentus</i>	FT	-	No
MAMMALS				
Black-tailed jackrabbit	<i>Lepus californicus</i>	-	SC	No
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>	-	SC	No
Washington ground squirrel	<i>Spermophilus washingtoni</i>	FC	SC	No
White-tailed jackrabbit	<i>Lepus townsendii</i>	-	SC	No
REPTILES/AMPHIBIANS				
Boreal toad	<i>Bufo boreas</i>	-	SC	No
Columbia spotted frog	<i>Rana luteiventris</i>	-	SC	Yes
Northern leopard frog	<i>Rana pipens</i>	-	SE	No
INVERTEBRATES				
Juniper hairstreak	<i>Mitoura grynea barryi</i>	-	SC	No
Mann's mollusk-eating ground beetle	<i>Scaphinotus mannii</i>	-	SC	No
Shepherd's parnassian	<i>Parnassius clodius shepherdii</i>	-	SC	No
Silver-bordered fritillary	<i>Boloria selene</i>	-	SC	No

## A.6.2.2 Fairchild AFB Natural Resources Consultation Letter 2 (Continued)

F\_002\_B\_A

Common Name	Scientific Name	Status		Occurrence at Fairchild AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
	<i>atrocostalis</i>			
<b>PLANTS</b>				
American pillwort	<i>Pilularia americana</i>	-	ST	Yes
Austin's knotweed	<i>Polygonum austini</i>	-	ST	No
Dwarf rush	<i>Juncus hemiendytus</i> var. <i>hemiandytus</i>	-		No
Grand redstem	<i>Ammannia robusta</i>	-	ST	No
Howellia	<i>Howellia aquatilis</i>	FT	ST	No
Lowland toothcup	<i>Rotala ramosior</i>	-	ST	No
Northwestern yellowflax	<i>Sclerolinon digynum</i>	-	ST	Yes
Palouse goldenweed	<i>Haplopappus liatrisformis</i>	-	ST	No
Rocky Mountain bulrush	<i>Scirpus saximontanus</i>	-	ST	No
Spalding's catchfly	<i>Silene spaldingi</i>	FT	ST	Yes
Yellow lady's-slipper	<i>Cypripedium parviflorum</i>	-	ST	No
<b>Key:</b> <sup>a</sup> U.S. Fish and Wildlife Service <sup>b</sup> Washington Department of Fish and Wildlife and the Washington Department of Natural Resources		FE=Listed as endangered under ESA FT=Listed as threatened under ESA FC=Candidate for Federal listing SE=State listed as endangered ST=State listed as threatened SC=Candidate for state listing SS=State listed sensitive species MBTA=Protected under Migratory Bird Treaty Act BGEPA= Protected under the Bald and Golden Eagle Protection Act		
<b>Sources:</b> Fairchild Air Force Base (AFB), 2012. <i>Fairchild Air Force Base Integrated Natural Resources Management Plan 2012-2016</i> . January 2012.  U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>  Washington Department of Fish and Wildlife 2013, (WDFG), 2013. Priority Habitats and Species List, Distribution by County. Accessed 06 May 2013 from <a href="http://wdfw.wa.gov/conservation/phs/list/">http://wdfw.wa.gov/conservation/phs/list/</a>  Washington Department of Natural Resources (WDNR), 2012. Accessed 06 May 2013 from <a href="http://www.dnr.wa.gov/Pages/default.aspx">http://www.dnr.wa.gov/Pages/default.aspx</a>				

Air Force NEPA Center (AFCEC/CZN)

*A.6.2.4 Fairchild AFB Natural Resources Consultation Letter 2 Response*

**Subject:** RE: Comments on KC-46A tanker

F\_002\_B\_A-R1

-----Original Message-----

From: GAMON, JOHN (DNR) [<mailto:JOHN.GAMON@dnr.wa.gov>]

Sent: Wednesday, June 26, 2013 2:30 PM

To: SELSER, STEVEN D GS-11 USAF AMC 92 CES/CEIE

Subject: Comments on KC-46A tanker

Steve - I submitted comments on-line regarding the list of species at Fairchild. I copied and pasted in below the comments that I submitted. Let me know if you have any questions.

To Whom - I am commenting on a table of listed and candidate species known to occur on Fairchild AFB that was provided to us (Washington Natural Heritage Program/Dept. of Natural Resources) in a letter received on 20 June 2013. In addition to those species listed in the table, we have documented occurrences on Fairchild AFB of two other rare plant species: *Juncus uncialis* (inch-high rush) and *Myosurus clavicaulis* (mousetail). Both are considered State Sensitive by the Washington Natural Heritage Program. If you would like additional information on these two species, or on any of the species in the table attached to the above-referenced letter, please let me know. We'll be happy to provide whatever information we can. Sincerely, John Gamon Program Manager Washington Natural Heritage Program Department of Natural Resources Olympia, Washington

John Gamon, Manager  
Natural Heritage Program  
Washington State Department of Natural Resources  
1111 Washington Street SE  
Olympia, Washington 98504-7014  
(360) 902-1661  
[john.gamon@dnr.wa.gov](mailto:john.gamon@dnr.wa.gov)

## A.6.3 Grand Forks AFB Natural Resources Consultation Letters

### A.6.3.1 Grand Forks AFB Natural Resources Consultation Letter 1



DEPARTMENT OF THE AIR FORCE  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

G\_001\_B\_A

27 March 2013

Mr. J. Dale Clark  
Air Force NEPA Center (AFCEC/CZN)  
2261 Hughes Ave, Suite 155  
Lackland AFB TX 78235-9853

Douglass Prchal, Director  
North Dakota Parks and Recreation Department  
1600 East Century Avenue, Suite 3  
Bismarck ND 58503-0649

Dear Mr. Prchal

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Altus Air Force Base (AFB), OK and McConnell AFB, KS are proposed for the FTU mission and Altus AFB, McConnell AFB, Grand Forks AFB, ND and Fairchild AFB, WA are proposed for the MOB 1 mission. No base would receive both missions. Additional information on the beddown and EIS process is included in the attached Notice of Intent from the March 26, 2013 Federal Register.

The Air Force will host four public come and go open house scoping meetings in areas near the bases proposed for this action (see attached scoping brochure). The purpose of the meetings and the scoping period is to solicit comments on the scope of environmental issues to be analyzed in depth in the EIS. Public and agency comments provided to the Air Force during the scoping period will be considered in the preparation of the Draft EIS. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

We request your participation and solicit scoping comments on this action. Please provide any comments by May 17, 2013 directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

Sincerely,

  
J. DALE CLARK, P.E.  
Chief, Air Force NEPA Center

Attachments:

1. Notice of Intent
2. KC-46A FTU and MOB 1 Brochure

### A.6.3.2 Grand Forks AFB Natural Resources Consultation Letter 1 Response



G\_001\_B\_A-R1  
Jack Dallymple, Governor  
Mark A. Zimmerman, Director

May 9, 2013

Ms. Jean Reynolds  
US Air Force  
Midwest Office 507 Symington Dr  
AFCEC/CZN  
Scott AFB, IL 62225-5022

Re: US Air Force EIS KC-46A Beddown

Dear Ms. Reynolds,

The North Dakota Parks and Recreation Department (the Department) has reviewed the above referenced project associated with the beddown of the Formal Training Unit and the first Main Operating Base of the KC-46A tanker aircraft at proposed site at Grand Forks Air Force Base.

Our agency scope of authority and expertise covers recreation and biological resources (in particular rare plants and ecological communities). The project as defined does not affect state park lands that we manage or Land and Water Conservation Fund recreation projects that we coordinate.

One concern the Department has is related to the changes in type, frequency and timing of aircraft noise which may be increased as a result of the proposed project may have on Turtle River State Park located several miles west of Grand Forks Air Force Base.

The North Dakota Natural Heritage biological conservation database has been reviewed to determine if any plant or animal species of concern or other significant ecological communities are known to occur within an approximate one-mile radius of the project area. Based on this review, we several species of concern documented within sections and in adjacent sections to project area. Please see the attached spreadsheet and map for more information on these occurrences.

We appreciate your commitment to rare plant, animal and ecological community conservation, management and inter-agency cooperation to date. For additional information please contact Kathy Duttonheffer of our staff. Thank you for the opportunity to comment on this proposed project.

Sincerely,

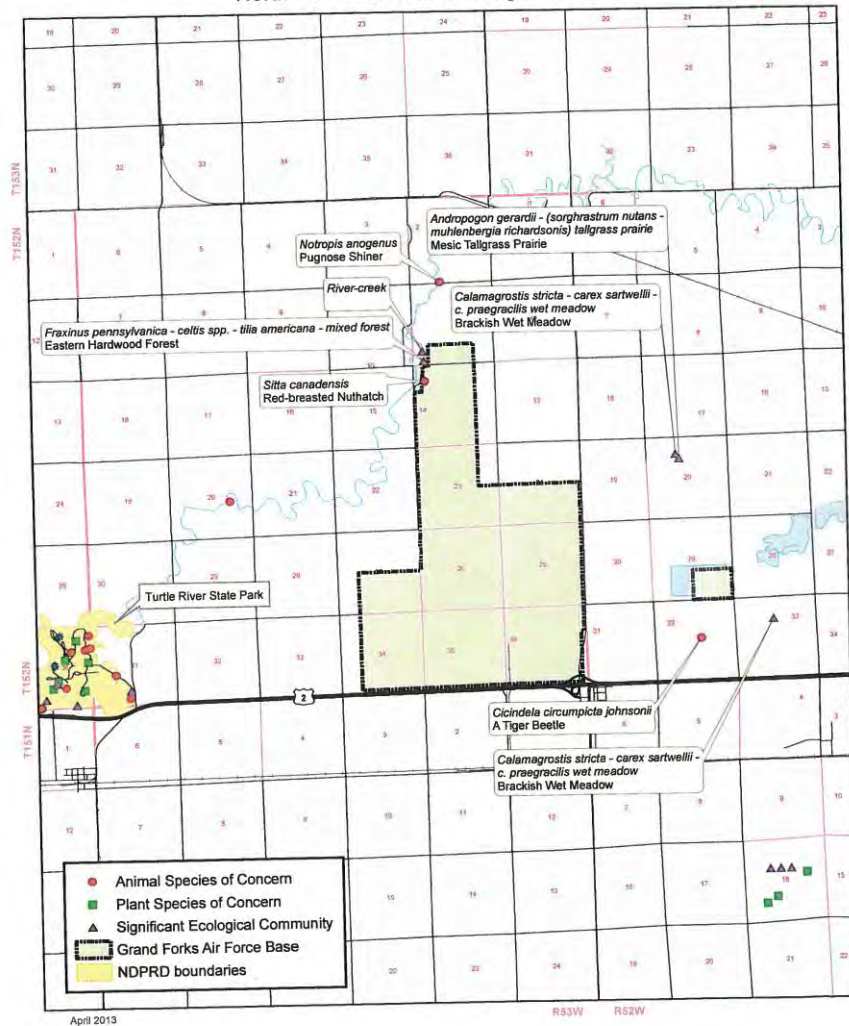
Jesse Hanson, Manager  
Planning and Natural Resources Division

R.USNDNH1\*2013\_056KD5.9.2013DL5.17.2013

\*\*\*\*\*  
Play in our backyard!

#### North Dakota Parks and Recreation Department North Dakota Natural Heritage Inventory

G\_001\_B\_A-R1



## A.6.3.2 Grand Forks AFB Natural Resources Consultation Letter 1 Response (Continued)

North Dakota Natural Heritage Inventory  
Rare Animal and Plant Species and Significant Ecological Communities

State Scientific Name	State Common Name	State Rank	Global Rank	Federal Status	Township Range Section	County	Last Observation	Estimated Representation Accuracy	Precision
<i>Andropogon gerardii</i> - (sorghastrum nutans - muhlenbergia richardsoni) tallgrass prairie	Mesic Tallgrass Prairie	S1	GNR		152N052W - 20	Grand Forks	1995-09-27		S
<i>Calamagrostis stricta</i> - <i>Carex sartwellii</i> - <i>C. praegracilis</i> wet meadow	Brackish Wet Meadow	S2S3	GNR		152N052W - 20	Grand Forks	1995-09-27		S
<i>Calamagrostis stricta</i> - <i>Carex sartwellii</i> - <i>C. praegracilis</i> wet meadow	Brackish Wet Meadow	S2S3	GNR		152N052W - 33	Grand Forks	1995-09-27		S
<i>Cicindela circumpecta</i> johnsonii	A Tiger Beetle	SNR	G5T5		152N052W - 32; 151N052W - 04; 152N052W - 28; 152N052W - 30; 152N052W - 31; 151N052W - 06; 152N052W - 29; 151N052W - 05; 152N052W - 33	Grand Forks	1973-07-17		M
<i>Fraxinus pennsylvanica</i> - <i>Celtis</i> spp. - <i>Tilia americana</i> - mixed forest	Eastern Hardwood Forest	S3	GNR		152N053W - 11; 152N053W - 14	Grand Forks	1993-10		S
					152N053W - 02; 152N053W - 11; 152N053W - 15; 153N052W - 31; 152N053W - 14; 152N053W - 03; 152N053W - 01; 152N053W - 12; 152N053W - 10; 152N053W - 13; 153N053W - 35; 153N053W - 36	Grand Forks	1982-06-04		M
<i>Notropis anogenus</i>	Pugnose Shiner	S1	G3		152N053W - 11	Grand Forks	1993-10		S
River-creek		S1	GNR			Grand Forks			S
<i>Sitta canadensis</i>	Red-breasted Nuthatch	S4	G5		152N053W - 14	Grand Forks	1993-10		S

G\_001\_B\_A-R1

## North Dakota Natural Heritage Inventory Biological and Conservation Data Disclaimer

The quantity and quality of data collected by the North Dakota Natural Heritage Inventory are dependent on the research and observations of many individuals and organizations. In most cases, this information is not the result of comprehensive or site-specific field surveys; many natural areas in North Dakota have never been thoroughly surveyed, and new species are still being discovered. For these reasons, the Natural Heritage Inventory cannot provide a definite statement on the presence, absence, or condition of biological elements in any part of North Dakota. Natural Heritage data summarize the existing information known at the time of the request. Our data are continually upgraded and information is continually being added to the database. This data should never be regarded as final statements on the elements or areas that are being considered, nor should they be substituted for on-site surveys.

## Estimated Representation Accuracy

Value that indicates the approximate percentage of the Element Occurrence Representation (EO Rep) that was observed to be occupied by the species or community (versus buffer area added for locational uncertainty). Use of estimated representation accuracy provides a common index for the consistent comparison of EO reps, thus helping to ensure that aggregated data are correctly analyzed and interpreted.

Very high (>95%)  
High (>80%, <= 95%)  
Medium (>20%, <= 80%)  
Low (>0%, <= 20%)  
Unknown  
(null) - Not assessed

## Precision

A single-letter code for the precision used to map the Element Occurrence (EO) on a U.S. Geological Survey (USGS) 7.5' (or 15') topographic quadrangle map, based on the previous Heritage methodology in which EOs were located on paper maps using dots.

S - Seconds: accuracy of locality mappable within a three-second radius; 100 meters from the centerpoint  
M - Minute: accuracy of locality mappable within a one-minute radius; 2 km from the centerpoint  
G - General: accuracy of locality mappable to map or place name precision only; 8 km from centerpoint  
U - Unmappable

G\_001\_B\_A-R1

A.6.3.3 *Grand Forks AFB Natural Resources Consultation Letter 2*



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

G\_002\_B\_A

G\_002\_B\_A

Lt Col Edward P. Phillips  
319 CES/CC  
525 Tuskegee Airmen Blvd  
Grand Forks AFB, ND 58205-6434

JUN 19 2013

Terry Steinwand, Director  
North Dakota Game and Fish Department  
100 N. Bismarck Expressway  
Bismarck, ND 58501-5095

Dear Mr. Steinwand,

The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Grand Forks Air Force Base (GFAFB) has been selected as a candidate for the MOB 1 mission.

The beddown for the MOB 1 mission would include 36 KC-46A aircraft for three squadrons. The selected basing location would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements for the MOB 1 mission would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base on GFAFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The USAF has identified threatened and endangered species that could occur near or on Grand Forks AFB and will be evaluated in the EIS. These species are attached to this letter for your review. This information is based on recent biological surveys conducted on the installation and other information obtained from the U.S. Fish and Wildlife Service, the North Dakota Parks and Recreation Department and the ND Fish and Game Department websites.

The USAF requests your agency's concurrence with the species list contained in the Attachment. If your agency has any new or additional information, we request that you please provide comments within 30 days of receipt. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott AFB, IL 62225-5022 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

Sincerely,

EDWARD P. PHILLIPS, Lt Col, USAF  
Commander, 319th Civil Engineer Squadron

Attachment:  
Threatened and Endangered Species List

## A.6.3.3 Grand Forks AFB Natural Resources Consultation Letter 2 (Continued)

G\_002\_B\_A

G\_002\_B\_A

Attachment -- Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the Endangered Species Act

Common Name	Scientific Name	Status		Occurrence at Grand Forks AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
BIRDS				
Whooping Crane	<i>Grus americana</i>	MBTA	SE	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	MBTA, BGEPa	SE	Yes
American Avocet	<i>Recurvirostra americana</i>	MBTA	ND CWCS	Yes
American Bittern	<i>Botaurus lentiginosus</i>	MBTA	ND CWCS	Yes
American White Pelican	<i>Pelecanus erythrorhynchos</i>	MBTA	ND CWCS	Yes
Black Tern	<i>Chlidonias niger</i>	MBTA	ND CWCS	Yes
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	MBTA	ND CWCS	Yes
Bobolink	<i>Dolichonyx oryzivorus</i>	MBTA	ND CWCS	Yes
Canvasback	<i>Aythya valisineria</i>	MBTA	ND CWCS	Yes
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	MBTA	ND CWCS	Yes
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	MBTA	S3, ND CWCS	Yes
Common Goldeneye	<i>Bucephala clangula</i>	MBTA	S3, ND CWCS	Yes
Dickcissel	<i>Spiza americana</i>	MBTA	ND CWCS	Yes
Ferruginous Hawk	<i>Buteo regalis</i>	MBTA	ND CWCS	Yes
Franklin's Gull	<i>Leucophaeus pipixcan</i>	MBTA	ND CWCS	Yes
Golden Eagle	<i>Aquila chrysaetos</i>	MBTA, BGEPa	ND CWCS	Yes
Grasshopper Sparrow	<i>Ammodramus saviannarum</i>	MBTA	ND CWCS	Yes
Green Heron	<i>Butorides virescens</i>	MBTA	S3, ND CWCS	Yes
Hooded Merganser	<i>Lophodytes cucullatus</i>	MBTA	S3, ND CWCS	Yes
Horned Grebe	<i>Podiceps auritus</i>	MBTA	ND CWCS	Yes
Lark Bunting	<i>Calamospiza melanocorys</i>	MBTA	ND CWCS	Yes
Le Conte's Sparrow	<i>Ammodramus leconteii</i>	MBTA	ND CWCS	Yes
Marbled Godwit	<i>Limosa fedoa</i>	MBTA	ND CWCS	Yes
Merlin	<i>Falco columbarius</i>	MBTA	S2, ND CWCS	Yes
Nelson's Sharp-tailed	<i>Ammodramus</i>	MBTA	ND CWCS	Yes

Sparrow	<i>nelsoni</i>			
Northern Harrier	<i>Circus cyaneus</i>	MBTA	ND CWCS	Yes
Northern Pintail	<i>Anas acuta</i>	MBTA	ND CWCS	Yes
Peregrine Falcon	<i>Falco peregrinus</i>	MBTA	S1, ND CWCS	Yes
Philadelphia Vireo	<i>Vireo philadelphicus</i>	MBTA	S3	Yes
Pileated Woodpecker	<i>Dryocopus pileatus</i>	MBTA	S3	Yes
Redhead	<i>Aythya americana</i>	MBTA	ND CWCS	Yes
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	MBTA	ND CWCS	Yes
Sedge Wren	<i>Cistothorus platensis</i>	MBTA	ND CWCS	Yes
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	MBTA	ND CWCS	Yes
Short-eared Owl	<i>Asio flammeus</i>	MBTA	ND CWCS	Yes
Sprague's Pipit	<i>Anthus spragueii</i>	MBTA, C	S3, ND CWCS	No
Swainson's Hawk	<i>Buteo swainsoni</i>	MBTA	ND CWCS	Yes
Swamp Sparrow	<i>Melospiza georgiana</i>	MBTA	S3	Yes
Upland Sandpiper	<i>Bartamia longicauda</i>	MBTA	ND CWCS	Yes
White-throated Sparrow	<i>Zonotrichia albicollis</i>	MBTA	S3	Yes
Willet	<i>Tringa semipalmata</i>	MBTA	ND CWCS	Yes
Wilson's Phalarope	<i>Phalaropus tricolor</i>	MBTA	ND CWCS	Yes
Yellow Rail	<i>Coturnicops noveboracensis</i>	MBTA	ND CWCS	Yes
<b>PLANTS</b>				
Eastern prickly gooseberry	<i>Ribes cynosbati</i>	-	S3	Yes
Dutchman's breeches	<i>Dicentra cucullaria</i>	-	S1	Yes
Lesser yellow lady's slipper	<i>Cypripedium parviflorum var. parviflorum</i>	-	S2/S3	Yes
White lady's slipper	<i>Cypripedium candidum</i>	-	S2/S3	Yes
<b>OTHER</b>				
Common Snapping Turtle	<i>Chelydra serpentina</i>	-	ND CWCS, NDCC 20.1-06-16	Yes
Canadian Toad	<i>Bufo hymnophrys</i>	-	ND CWCS	Yes
Mapleleaf	<i>Quadrula quadrula</i>	-	S3, ND CWCS	Yes
Fisher	<i>Maries pennanti</i>	-	S2, NDCC 20.1-07-03	Yes
<b>Key:</b>		SE=State-listed as endangered under		

A.6.3.3 *Grand Forks AFB Natural Resources Consultation Letter 2 (Continued)*

G\_002\_B\_A

<sup>1</sup> U.S. Fish and Wildlife Service <sup>2</sup> North Dakota Parks and Recreation Department <sup>3</sup> North Dakota Fish and Game Department	the Nature Preserves Act MBTA=Protected under Migratory Bird Treaty Act BGEPA= Protected under the Bald and Golden Eagle Protection Act C = Federal Candidate for T&E Program S1=State-listed critically imperiled S2= State-listed imperiled S3= State-listed rare or uncommon ND CWCS = North Dakota Special Programs, Comprehensive Wildlife Conservation Strategy, 100 Species of Conservation Priority NDCC = North Dakota Century Code
<b>Sources:</b> Grand Forks Air Force Base (AFB), 2011. <i>Integrated Natural Resources Management Plan, Grand Forks Air Force Base, North Dakota</i> . Air Mobility Command, 319th Air Base Wing. November 2011. North Dakota Natural Heritage Program (NDNHP), 2013. Accessed 06 May 2013 from <a href="http://www.parkrec.nd.gov/nature/heritage.htm">http://www.parkrec.nd.gov/nature/heritage.htm</a> U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a> North Dakota's 100 Species of Conservation Priority, 2004. North Dakota Fish and Game Department. North Dakota Century Code (NDCC) 2013 from <a href="http://www.legis.nd.gov/general-information/north-dakota-century-code">http://www.legis.nd.gov/general-information/north-dakota-century-code</a>	

A.6.3.4 *Grand Forks AFB Natural Resources Consultation Letter 3*



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

G\_003\_B\_A

G\_003\_B\_A

Lt Col Edward P. Phillips  
319 CES/CC  
525 Tuskegee Airmen Blvd  
Grand Forks AFB, ND 58205-6434

JUN 19 2013

Jeffrey Towner/Field Supervisor  
U.S. Fish & Wildlife Service  
North Dakota Field Office  
3425 Miriam Avenue  
Bismarck, ND 58501-7926

Dear Mr. Towner,

The United States Air Force (USAF) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. Grand Forks Air Force Base (GFAFB) has been selected as a candidate for the MOB 1 mission.

The beddown for the MOB 1 mission would include 36 KC-46A aircraft for three squadrons. The selected basing location would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements for the MOB 1 mission would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base on GFAFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The USAF has identified threatened and endangered species that could occur near or on Grand Forks AFB and will be evaluated in the EIS. These species are attached to this letter for your review. This information is based on recent biological surveys conducted on the installation and other information obtained from the U.S. Fish and Wildlife Service, the North Dakota Parks and Recreation Department and the ND Fish and Game Department websites.

The USAF requests your agency's concurrence with the species list contained in the Attachment. If your agency has any new or additional information, we request that you please provide comments within 30 days of receipt. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN Midwest Office, 507 Symington Drive, Scott

AFB, IL 62225-5022 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

Sincerely,

A handwritten signature of Edward P. Phillips in black ink.

EDWARD P. PHILLIPS, Lt Col, USAF  
Commander, 319th Civil Engineer Squadron

Attachment:  
Threatened and Endangered Species List

## A.6.3.4 Grand Forks AFB Natural Resources Consultation Letter 3 (Continued)

G\_003\_B\_A

G\_003\_B\_A

Attachment -- Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the Endangered Species Act

Common Name	Scientific Name	Status		Occurrence at Grand Forks AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
BIRDS				
Whooping Crane	<i>Grus americana</i>	MBTA	SE	No
Bald Eagle	<i>Haliaeetus leucocephalus</i>	MBTA, BGEPA	SE	Yes
American Avocet	<i>Recurvirostra americana</i>	MBTA	ND CWCS	Yes
American Bittern	<i>Botaurus lentiginosus</i>	MBTA	ND CWCS	Yes
American White Pelican	<i>Pelecanus erythrorhynchos</i>	MBTA	ND CWCS	Yes
Black Tern	<i>Chlidonias niger</i>	MBTA	ND CWCS	Yes
Black-billed Cuckoo	<i>Coccyzus erythrophthalmus</i>	MBTA	ND CWCS	Yes
Bobolink	<i>Dolichonyx oryzivorus</i>	MBTA	ND CWCS	Yes
Canvasback	<i>Aythya valisineria</i>	MBTA	ND CWCS	Yes
Chestnut-collared Longspur	<i>Calcarius ornatus</i>	MBTA	ND CWCS	Yes
Chestnut-sided Warbler	<i>Setophaga pensylvanica</i>	MBTA	S3, ND CWCS	Yes
Common Goldeneye	<i>Bucephala clangula</i>	MBTA	S3, ND CWCS	Yes
Dickcissel	<i>Spiza americana</i>	MBTA	ND CWCS	Yes
Ferruginous Hawk	<i>Buteo regalis</i>	MBTA	ND CWCS	Yes
Franklin's Gull	<i>Leucophaeus pipixcan</i>	MBTA	ND CWCS	Yes
Golden Eagle	<i>Aquila chrysaetos</i>	MBTA, BGEPA	ND CWCS	Yes
Grasshopper Sparrow	<i>Ammodramus saviannarum</i>	MBTA	ND CWCS	Yes
Green Heron	<i>Butorides virescens</i>	MBTA	S3, ND CWCS	Yes
Hooded Merganser	<i>Lophodytes cucullatus</i>	MBTA	S3, ND CWCS	Yes
Horned Grebe	<i>Podiceps auritus</i>	MBTA	ND CWCS	Yes
Lark Bunting	<i>Calamospiza melanocorys</i>	MBTA	ND CWCS	Yes
Le Conte's Sparrow	<i>Ammodramus lecontei</i>	MBTA	ND CWCS	Yes
Marbled Godwit	<i>Limosa fedoa</i>	MBTA	ND CWCS	Yes
Merlin	<i>Falco columbarius</i>	MBTA	S2, ND CWCS	Yes
Nelson's Sharp-tailed	<i>Ammodramus</i>	MBTA	ND CWCS	Yes

Sparrow	<i>nelsoni</i>			
Northern Harrier	<i>Circus cyaneus</i>	MBTA	ND CWCS	Yes
Northern Pintail	<i>Anas acula</i>	MBTA	ND CWCS	Yes
Peregrine Falcon	<i>Falco peregrinus</i>	MBTA	S1, ND CWCS	Yes
Philadelphia Vireo	<i>Vireo philadelphicus</i>	MBTA	S3	Yes
Pileated Woodpecker	<i>Dryocopus pileatus</i>	MBTA	S3	Yes
Redhead	<i>Aythya americana</i>	MBTA	ND CWCS	Yes
Red-headed Woodpecker	<i>Melanerpes erythrocephalus</i>	MBTA	ND CWCS	Yes
Sedge Wren	<i>Cistothorus platensis</i>	MBTA	ND CWCS	Yes
Sharp-tailed Grouse	<i>Tympanuchus phasianellus</i>	MBTA	ND CWCS	Yes
Short-eared Owl	<i>Asio flammeus</i>	MBTA	ND CWCS	Yes
Sprague's Pipit	<i>Anthus spraguei</i>	MBTA, C	S3, ND CWCS	No
Swainson's Hawk	<i>Buteo swainsoni</i>	MBTA	ND CWCS	Yes
Swamp Sparrow	<i>Melospiza georgiana</i>	MBTA	S3	Yes
Upland Sandpiper	<i>Bartamia longicauda</i>	MBTA	ND CWCS	Yes
White-throated Sparrow	<i>Zonotrichia albicollis</i>	MBTA	S3	Yes
Willet	<i>Tringa semipalmata</i>	MBTA	ND CWCS	Yes
Wilson's Phalarope	<i>Phalaropus tricolor</i>	MBTA	ND CWCS	Yes
Yellow Rail	<i>Coturnicops noveboracensis</i>	MBTA	ND CWCS	Yes
<b>PLANTS</b>				
Eastern prickly gooseberry	<i>Ribes cynosbati</i>	-	S3	Yes
Dutchman's breeches	<i>Dicentra cucullaria</i>	-	S1	Yes
Lesser yellow lady's slipper	<i>Cypripedium parviflorum var. parviflorum</i>	-	S2/S3	Yes
White lady's slipper	<i>Cypripedium candidum</i>	-	S2/S3	Yes
<b>OTHER</b>				
Common Snapping Turtle	<i>Chelydra serpentina</i>	-	ND CWCS, NDCC 20.1-06-16	Yes
Canadian Toad	<i>Bufo hymnophrys</i>	-	ND CWCS	Yes
Mapleleaf	<i>Quadrula quadrula</i>	-	S3, ND CWCS	Yes
Fisher	<i>Martes pennanti</i>	-	S2, NDCC 20.1-07-03	Yes
<b>Key:</b>			SE=State-listed as endangered under	

A.6.3.4 Grand Forks AFB Natural Resources Consultation Letter 3 (Continued)

G\_003\_B\_A

<p>*U.S. Fish and Wildlife Service                  *North Dakota Parks and Recreation Department                  *North Dakota Fish and Game Department</p>	<p>the Nature Preserves Act                  MBTA=Protected under Migratory Bird Treaty Act                  BGEPA= Protected under the Bald and Golden Eagle Protection Act                  C = Federal Candidate for T&amp;E Program                  S1=State-listed critically imperiled                  S2= State-listed imperiled                  S3= State-listed rare or uncommon                  ND CWCS = North Dakota Special Programs, Comprehensive Wildlife Conservation Strategy, 100 Species of Conservation Priority                  NDCC = North Dakota Century Code</p>
<p><b>Sources:</b>                  Grand Forks Air Force Base (AFB), 2011. <i>Integrated Natural Resources Management Plan, Grand Forks Air Force Base, North Dakota</i>. Air Mobility Command, 319th Air Base Wing. November 2011.                  North Dakota Natural Heritage Program (NDNHP), 2013. Accessed 06 May 2013 from <a href="http://www.parkrec.nd.gov/nature/heritage.html">http://www.parkrec.nd.gov/nature/heritage.html</a>                  U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>                  North Dakota's 100 Species of Conservation Priority, 2004. North Dakota Fish and Game Department.                  North Dakota Century Code (NDCC) 2013 from <a href="http://www.legis.nd.gov/general-information/north-dakota-century-code">http://www.legis.nd.gov/general-information/north-dakota-century-code</a></p>	

## A.6.3.5 Grand Forks AFB Natural Resources Consultation Letter 4



DEPARTMENT OF THE AIR FORCE  
HEADQUARTERS 319TH AIR BASE WING (AMC)  
GRAND FORKS AIR FORCE BASE, NORTH DAKOTA

G\_004\_B\_A

G\_004\_B\_A

319 CES/CD  
525 Tuskegee Airmen Blvd  
Grand Forks AFB, ND 58205-6434

Daniel E. Cimarosti, North Dakota Program Manager  
North Dakota Regulatory Office  
US Army Corps of Engineers  
1513 South 12<sup>th</sup> Street  
Bismarck, ND 58504

SEP 26 2013

Dear Mr. Cimarosti

The Air Force is in the process of selecting a base for the new KC-46A tanker aircraft. The Air Force has indicated that McConnell Air Force Base (AFB) is the preferred location for this mission, but Grand Forks and two other installations are being analyzed as alternatives in an Environmental Impact Statement (EIS). The EIS is currently being prepared to evaluate the environmental consequences of bringing this new mission to each of the four bases. The attached wetland delineation report (Atch 1) was prepared to identify potential wetland impacts should Grand Forks AFB be selected for this mission. The project area is located in T152, R53, Sections 23 and 26.


The wetland delineation report was completed by SAIC, government contractor, using the Great Plains USACE manual to update the existing wetland inventory and determine the presence of wetlands. Some previously delineated wetlands were determined jurisdictional by your office, specifically the wetland FLN-06 system in 2005. Resultant forms from each data point are available for your review describing field conditions in the appendix of the prepared wetland delineation (Atch 1). Two maps have been constructed to show the wetland locations and the associated watershed area (Atch 2).

GFafb requests that a jurisdictional determination be conducted by the USACE on the provided wetland delineation materials. Based on preliminary plans for a potential beddown of KC46A tanker aircraft, construction activities could result in unavoidable impacts to wetlands. Please indicate whether or not wetlands in the below table are jurisdictional and regulated by the USACE.

Wetland ID	Acreage	NWI	Comments
FLE-19	5.26	PEM	Existing boundaries of this wetland were expanded during field delineation. 0.21 acres are "new".

			Existing Wetland/Drainage Ditch
FLE-20	0.43	PEM	
FLE-25	0.03	PEM	new delineation
FLE-26	0.46	PEM	new delineation
FLE-27	0.29	PEM	new delineation
FLE-28	0.23	PEM	new delineation
FLE-29	0.1	PEM	new delineation
FLE-30	0.33	PEM	new delineation
FLE-31	0.01	PEM	new delineation
KC-D1	0.16	PEM	new delineation, drainage ditch
KC-D2	0.09	PEM	new delineation, drainage ditch
KC-D3	0.4	PEM	new delineation, drainage ditch
KC-W1	0.21	PEM	new delineation
NES-24	0.02	PEM	new delineation
NES-25	0.82	PEM	new delineation

If you have any questions, please direct them to Ms. Kristen Rundquist, Natural Resources Manager, at 701-747-4774. Thank you.

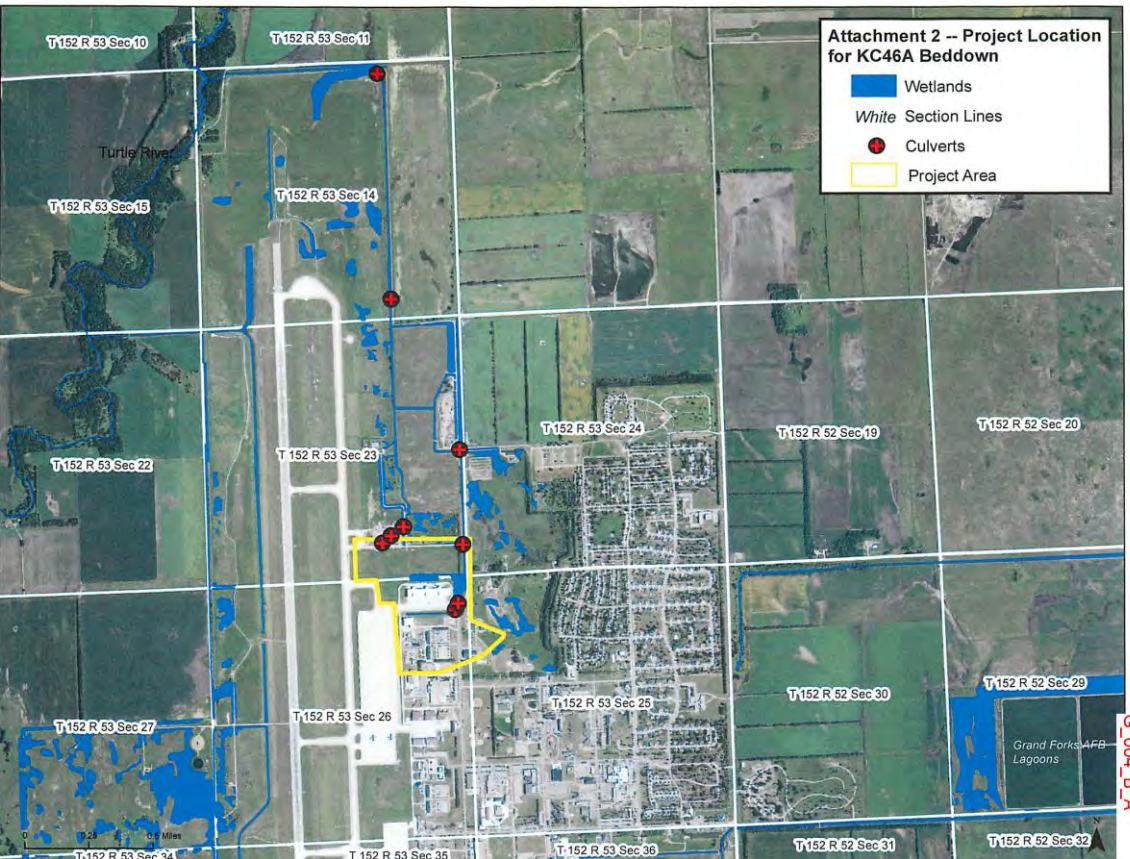
Sincerely,  
  
LESLIE W. CANARR  
Deputy Base Civil Engineer

Attachments:  
1. Wetland Delineation Report on CD  
2. Wetland Maps

A.6.3.5 Grand Forks AFB Natural Resources Consultation Letter 4 (Continued)

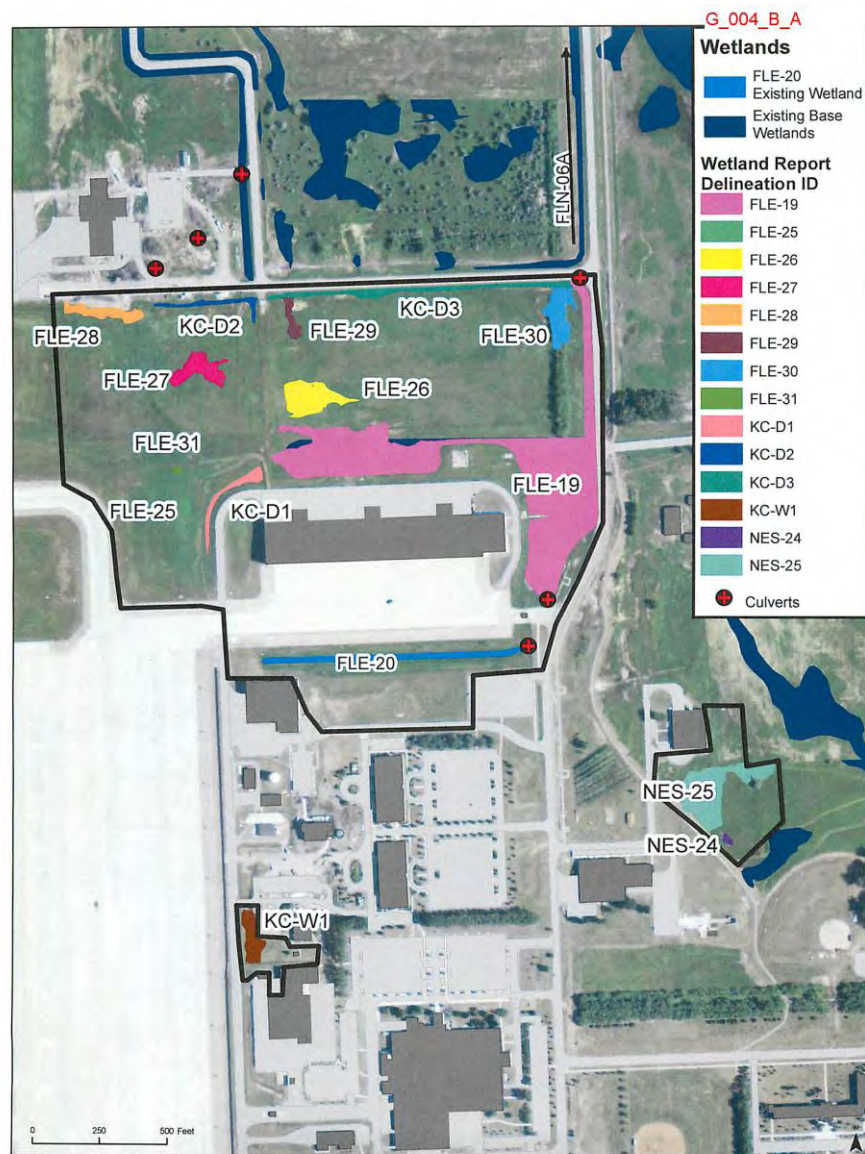
Attachment 1 – Wetland Delineation Report on CD

G\_004\_B\_A



G\_004\_B\_A

A.6.3.5 Grand Forks AFB Natural Resources Consultation Letter 4 (Continued)



A.6.3.6 Grand Forks AFB Natural Resources Consultation Letter 5



DEPARTMENT OF THE AIR FORCE  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

G\_005\_B\_A

MEMORANDUM FOR INTERESTED INDIVIDUALS, ORGANIZATIONS,  
PUBLIC GROUPS, GOVERNMENT AGENCIES AND OTHERS

SEP 26 2013

FROM: AFCEC/CZN  
2261 Hughes Ave, Suite 155  
JBSA Lackland, TX 78236-9853

SUBJECT: Draft Environmental Impact Statement (EIS) for the KC-46A Formal Training  
Unit (FTU) and First Main Operating Base (MOB 1) Beddown

We are pleased to provide you with a copy of the *KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Draft EIS*. This document is provided in accordance with the National Environmental Policy Act (NEPA). Libraries are requested to have this document remain available throughout the 45-day public comment period which ends on 25 November 2013. This document is also available online at <http://www.kc-46a-beddown.com>.

Notification of the availability of the Draft EIS will appear in the *Federal Register* on 11 October 2013. The EIS analyzes alternative actions for the U.S. Air Force's (USAF's) proposal to beddown KC-46A aircraft, construct supporting infrastructure, provide appropriate manpower and conduct KC-46A flight operations.

As listed below, the USAF will hold four public hearings on the Draft EIS between 28 October and 7 November 2013. The purpose of the hearings is to receive public and agency input on the proposed action/alternatives and the Draft EIS analysis. The hearings will also be announced through local media.

October 28, 2013	Altus AFB	Altus City Auditorium, 300 E. Commerce, Altus, OK 73521
October 30, 2013	McConnell AFB	Eugene M. Hughes Metropolitan Complex, Room 180, 5015 E. 29th Street N., Wichita, KS 67260
November 5, 2013	Fairchild AFB	The Lincoln Center, Monroe Ballroom, 1316 N. Lincoln Street, Spokane, WA 99201
November 7, 2013	Grand Forks AFB	Alerus Center, Hawk Meeting Room, 1200 42nd Street South., Grand Forks, ND 58201

Substantive comments presented at the public hearings and submitted to the USAF will be considered in the Final EIS. Comments must be postmarked by 25 November 2013 for incorporation into the Final EIS. Questions or comments can be submitted via the website or to the Air Force Civil Engineer Center (AFCEC) project point-of-contact: Ms. Jean Reynolds, 2261 Hughes Ave., Ste. 155, JBSA Lackland, TX 78236-9853. Additional information can be found on the project website listed above.

Sincerely,

J. DALE CLARK, GS-14 (AFCEC/CZN)  
Chief, Air Force NEPA Center  
Environmental Directorate

A.6.3.7 Grand Forks AFB Natural Resources Consultation Letter 5 Response



ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
www.ndhealth.gov



G\_005\_B\_A-R1

October 14, 2013

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN  
2261 Hughes Ave., Ste. 155  
JBSA Lackland, TX 78236-9853

Re: Draft EIS for the KC-46A Formal Training Unit and First Main Operating Base Beddown  
Grand Forks AFB, Grand Forks County, North Dakota

Dear Ms. Reynolds:

This department has reviewed the information concerning the above-referenced project submitted under date of September 26, 2013, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210).

The facility is currently covered by the NDPDES industrial storm water permit. The Department recommends reviewing whether storm water quality improvements can be incorporated as part of any development or redevelopment project. Check with local officials to be sure any local storm water management considerations are addressed.

Environmental Health Section Chief's Office 701.328.5160	Division of Air Quality 701.328.5168	Division of Municipal Facilities 701.328.5211	Division of Waste Management 701.328.5166	Division of Water Quality 701.328.5210
--	--	---	---	--

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G\_005\_B\_A-R1

Ms. Jean Reynolds

2.

October 14, 2013

4. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the Department's Division of Air Quality (701-328-5188) is required before any demolition. Removal of any friable asbestos-containing material must be accomplished in accordance with section 33-15-13-02 of the North Dakota air pollution control rules.
5. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.
6. Many buildings constructed prior to 1978 have interior and exterior surfaces coated with lead-based paint. The Office of Housing and Urban Development (HUD), as well as other Federal Housing Authorities, have implemented requirements for reducing exposure to lead from lead-based paint. If the building receives Federal funding, these materials must be handled according to their requirements which may include the use of properly trained individuals for removal and disposal. If the building does not receive Federal funding, the lead-based paint should be properly handled to reduce or prevent exposing workers and building occupants to lead.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief  
Environmental Health Section

LDG:cc  
Attach.

A.6.3.7 Grand Forks AFB Natural Resources Consultation Letter 5 Response (Continued)



ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
www.ndhealth.gov

G\_005\_B\_A-R1



Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

**Soils**

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

**Surface Waters**

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

**Fill Material**

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

Environmental Health  
Section Chief's Office  
701.328.5150

Division of  
Air Quality  
701.328.5188

Division of  
Municipal Facilities  
701.328.5211

Division of  
Waste Management  
701.328.5166

Division of  
Water Quality  
701.328.5210

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## A.6.4 McConnell AFB Natural Resources Consultation Letters

### A.6.4.1 McConnell AFB Natural Resources Consultation Letter 1



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

M\_001\_B\_A

JUN 12 2013

Lt Col Jason J. Loschinsky  
Base Civil Engineer  
53000 Hutchinson St, Ste 5  
McConnell AFB KS 67221

Mr. Mike LeValley  
U.S. Fish and Wildlife Service  
Kansas Ecological Services Field Office  
2609 Anderson Avenue  
Manhattan KS 66502

Dear Mr. LeValley

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. McConnell AFB has been selected as an alternative for either the FTU mission or the MOB 1 mission. The base would not receive both missions.

The beddown for the FTU would include up to eight KC-46A tanker aircraft for one squadron at one base; and the beddown for the MOB 1 of 36 KC-46A aircraft for three squadrons at one base. The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements vary between the FTU and MOB 1 mission but all improvements would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base in previously developed areas, all at McConnell AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com).

The Air Force has identified threatened and endangered species that could occur near McConnell AFB and will be evaluated for potential impact as part of the EIS (Attachment 1). This list is based on a review of recent biological surveys conducted at McConnell AFB and other information obtained from the U.S. Fish and Wildlife Service website and the Kansas Natural Heritage Inventory website.

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

M\_001\_B\_A

The Air Force requests your agency's concurrence with the species list contained in Attachment 1. If your agency has any new or additional information other than that contained in Attachment 1, we request that you please provide comments by 01 July 2013. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN, Bldg. 171, 2261 Hughes Ave, Ste 155, Lackland AFB, TX 78236-9853 or to the project website at [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com). Thank you for your assistance in this matter.

  
JASON J. LOSCHINKSEY, Lt Col, USAF  
Base Civil Engineer

Attachment  
Potentially Occurring T&E Species

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

## A.6.4.1 McConnell AFB Natural Resources Consultation Letter 1 (Continued)

M\_001\_B\_A

Attachment I  
Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the  
Endangered Species Act

Common Name	Scientific Name	Status		Occurrence at McConnell AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
<b>BIRDS</b>				
Eskimo curlew	<i>Numenius borealis</i>	MBTA	SE	No
Interior least tern	<i>Sterna antillarum</i>	FE, MBTA	SE	No
Peregrine falcon	<i>Falco peregrinus</i>	MBTA	SE	No
Piping plover	<i>Charadrius melodus</i>	MBTA	SE	No
Snowy plover	<i>Charadrius alexandrinus</i>	MBTA	ST	No
Whooping crane	<i>Grus americana</i>	FE, MBTA	SE	No
<b>FISH</b>				
Arkansas darter	<i>Etheostoma cragini</i>	FC	ST	No
Arkansas River Shiner	<i>Etheostoma cragini</i>	-	SE	No
Arkansas River Speckled Chub	<i>Macrhybopsis tetranema</i>	-	SE	No
Silver chub	<i>Macrhybopsis storeriana</i>	-	SE	No
<b>MAMMALS</b>				
Eastern spotted skunk	<i>Spilogale putorius</i>	-	ST	No
Key: <sup>a</sup> U.S. Fish and Wildlife Service <sup>b</sup> Kansas Department of Wildlife, Parks and Tourism		FE=Listed as endangered under ESA FC=Candidate for Federal listing MBTA=Protected under Migratory Bird Treaty Act SE=State listed as endangered ST=State listed as threatened		
Sources: Kansas Department of Wildlife, Parks and Tourism (KDWPT), 2005. Kansas County Listing of T&E and SINC: A County by County Guide to Species Listed as Threatened & Endangered and Species in Need of Conservation in Kansas by the State and Federal Governments.  McConnell Air Force Base (AFB), 2004. United States Air Force, McConnell Air Force Base Updated Integrated Natural Resources Management Plan. January 2004.  U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>				

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

A.6.4.2 *McConnell AFB Natural Resources Consultation Letter 1 Response*



United States Department of the Interior

FISH AND WILDLIFE SERVICE  
Kansas Ecological Services Field Office  
2809 Anderson Avenue  
Manhattan, Kansas 66502-2801



M\_001\_B\_A-R1

July 8, 2013

Jean Reynolds  
U.S. Air Force  
AFCEC/CZN, Bldg. 171  
2261 Hughes Ave., Suite 155  
Lackland AFB, TX 78236

RE: FTU or MOB 1 at McConnell AFB, Sedgwick County, KS 64411-2013-CPA-0387

Dear Ms. Reynolds:

On June 21, 2013 we received a letter from Jason Loschinsky regarding the potential for McConnell Air Force Base in Wichita, Kansas, to be the site of an expanded mission that would result in new construction, renovation, alteration and demolition. All activities would occur in already-developed areas within the boundaries of the base. Mr. Loschinsky's letter requested Fish and Wildlife Service concurrence with a list of threatened and endangered species included for assessment.

I concur the list provided in his letter included all federally-listed species that may occur within the project area. I further concur with his determination that none of these species should occur on McConnell AFB or be affected by the proposed activities. No further consultation will be required pursuant to section 7 of the Endangered Species Act.

Thank you for this opportunity to review the proposal and provide input. If you have further comments or questions, please contact Dan Mulhern of this office at 785-539-3474, ext. 109.

Sincerely,

A handwritten signature in black ink, appearing to read "Heather Whitlaw".

Heather Whitlaw  
Field Supervisor

cc: KDWPT, Pratt, KS (Ecological Services)

A.6.4.3 McConnell AFB Natural Resources Consultation Letter 2



DEPARTMENT OF THE AIR FORCE  
22D CIVIL ENGINEER SQUADRON (AMC)  
McCONNELL AIR FORCE BASE, KANSAS 67221

Lt Col Jason J. Loschinsky  
Base Civil Engineer  
53000 Hutchinson St, Ste 5  
McConnell AFB KS 67221

Brian Bartels, Ecologist  
Ecological Services  
Kansas Dept. of Wildlife, Parks, and Tourism  
512 SE 25<sup>th</sup> Ave  
Pratt, KS 67124

Dear Mr Bartels

The United States Air Force (Air Force) is preparing an Environmental Impact Statement (EIS) to assess the potential environmental consequences associated with the beddown of the Formal Training Unit (FTU) and the first Main Operating Base (MOB 1) of the KC-46A tanker aircraft. McConnell AFB has been selected as an alternative for either the FTU mission or the MOB 1 mission. The base would not receive both missions.

The beddown for the FTU would include up to eight KC-46A tanker aircraft for one squadron at one base; and the beddown for the MOB 1 of 36 KC-46A aircraft for three squadrons at one base. The selected basing locations would need to accommodate training, flight operations and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training. Specific requirements vary between the FTU and MOB 1 mission but all improvements would include a combination of new construction, renovation, alteration, and demolition and would occur in the main portion of the base in previously developed areas, all at McConnell AFB. All construction or ground disturbance required by this project would be conducted within the current base boundary. Additional information can be found on the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).

The Air Force has identified threatened and endangered species that could occur near McConnell AFB and will be evaluated for potential impact as part of the EIS (Attachment 1). This list is based on a review of recent biological surveys conducted at McConnell AFB and other information obtained from the U.S. Fish and Wildlife Service website and the Kansas Natural Heritage Inventory website.

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

M\_002\_B\_A

Jun 12, 2013

M\_002\_B\_A

The Air Force requests your agency's concurrence with the species list contained in Attachment 1. If your agency has any new or additional information other than that contained in Attachment 1, we request that you please provide comments by 01 July 2013. Comments should be sent directly to Ms. Jean Reynolds, United States Air Force, AFCEC/CZN, Bldg. 171, 2261 Hughes Ave, Ste 155, Lackland AFB, TX 78236-9853 or to the project website at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com). Thank you for your assistance in this matter.

  
JASON J. LOSCHINSKY, Lt Col, USAF  
Base Civil Engineer

Attachment  
Potentially Occurring T&E Species

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

## A.6.4.3 McConnell AFB Natural Resources Consultation Letter 2 (Continued)

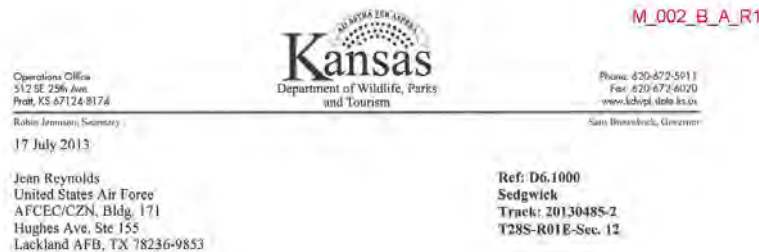
M\_002\_B\_A

Attachment I  
Species Federally Listed, Proposed, and Candidates for Listing as Endangered or Threatened under the  
Endangered Species Act

Common Name	Scientific Name	Status		Occurrence at McConnell AFB
		Federal <sup>a</sup>	State <sup>b</sup>	
<b>BIRDS</b>				
Eskimo curlew	<i>Numenius borealis</i>	MBTA	SE	No
Interior least tern	<i>Sterna antillarum</i>	FE, MBTA	SE	No
Peregrine falcon	<i>Falco peregrinus</i>	MBTA	SE	No
Piping plover	<i>Charadrius melodus</i>	MBTA	SE	No
Snowy plover	<i>Charadrius alexandrinus</i>	MBTA	ST	No
Whooping crane	<i>Grus americana</i>	FE, MBTA	SE	No
<b>FISH</b>				
Arkansas darter	<i>Etheostoma cragini</i>	FC	ST	No
Arkansas River Shiner	<i>Etheostoma cragini</i>	-	SE	No
Arkansas River Speckled Chub	<i>Macrhybopsis tetranema</i>	-	SE	No
Silver chub	<i>Macrhybopsis storeriana</i>	-	SE	No
<b>MAMMALS</b>				
Eastern spotted skunk	<i>Spilogale putorius</i>	-	ST	No
Key: <sup>a</sup> U.S. Fish and Wildlife Service <sup>b</sup> Kansas Department of Wildlife, Parks and Tourism		FE=Listed as endangered under ESA FC=Candidate for Federal listing MBTA=Protected under Migratory Bird Treaty Act SE=State listed as endangered ST=State listed as threatened		
Sources: Kansas Department of Wildlife, Parks and Tourism (KDWPT), 2005. Kansas County Listing of T&E and SINC: <i>A County by County Guide to Species Listed as Threatened &amp; Endangered and Species in Need of Conservation in Kansas by the State and Federal Governments</i> .  McConnell Air Force Base (AFB), 2004. <i>United States Air Force, McConnell Air Force Base Updated Integrated Natural Resources Management Plan</i> , January 2004.  U.S. Fish and Wildlife Service (USFWS), 2013. USFWS Endangered Species; Species by County Report. Accessed 06 May 2013 from <a href="http://www.fws.gov/endangered/">http://www.fws.gov/endangered/</a>				

WE ANSWER THE CALL OF OTHERS...SO THEY MAY PREVAIL

A.6.4.4 McConnell AFB Natural Resources Consultation Letter 2 Response



Dear Ms. Reynolds:

**RE: KDWPT T&E Review concerning construction of FTU and MOB1 in Sedgwick County.**

We have reviewed the information for the proposed FTU and MOB1 at McConnell AFB in Sedgwick County. The project was reviewed for potential impacts on crucial wildlife habitats, current state-listed threatened and endangered species and species in need of conservation, and Kansas Department of Wildlife, Parks, and Tourism managed areas for which this agency has administrative authority.

We have no objections to the proposed project and provide the following general recommendations:

- Incorporate principles of low impact development (LID), such as permeable asphalt pavement, swales, bioretention, raingardens and on-site phytoremediation.  
For more information on LID <http://www.forest.gov/NPS/lid>
- Implement and maintain standard erosion-control Best-Management-Practices such as silt fencing, hay/straw-bale ditch checks, erosion-control blankets, storm-drain-inlet protection and temporary weed-free seeding/mulching.
- Reseed with native warm-season grasses and forbs. We recommend selecting from Rare and Declining Habitat, Mix 9/NRCS 643.

Results of our review indicate there will be no significant impacts to crucial wildlife habitats; therefore, no special mitigation measures are recommended. The project will not impact any public recreational areas, nor could we document any potential impacts to currently-listed threatened or endangered species or species in need of conservation. No Department of Wildlife, Parks, and Tourism permits or special authorizations will be needed if construction is started within one year, and no design changes are made in the project plans.

Since the Department's recreational land obligations and the State's species listings periodically change, if construction has not started within one year of this date, or if design changes are made in the project plans, the project sponsor must contact this office to verify continued applicability of this assessment report. For our purposes, we consider construction started when advertisements for bids are distributed.

Thank you for the opportunity to provide these comments and recommendations. Please let me know if you have any questions or concerns about the preceding information.

Sincerely,

Brian Bartels, Ecologist  
Ecological Services Section

Pratt Operations Office  
512 SE 25th Ave., Pratt, KS 67124-8174  
Phone 620-672-5911 Fax 620-672-6020 www.kdwp.state.ks.us

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## A.7 DRAFT EIS CORRESPONDENCE AND OUTREACH

### A.7.1 Draft EIS and Public Hearing Notification Materials

#### A.7.1.1 Federal Register NOA



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Commission) and will not have the right to seek court review of the Commission's final order.

The Commission strongly encourages electronic filings of comments, protests, and interventions via the Internet in lieu of paper. See 18 CFR 385.2001(a) (1) (iii) and the instructions on the Commission's Web site ([www.ferc.gov](http://www.ferc.gov)) under the "e-Filing" link. Persons unable to file electronically should submit an original and 7 copies of the protest or intervention to the Federal Energy Regulatory Commission, 888 First Street NE, Washington, DC 20426. See 18 CFR 385.2001(a)(1)(iii) and the instructions on the Commission's Web site under the "e-Filing" link.

Dated: October 18, 2013.

Kimberly D. Rose,  
Secretary.

[FR Doc. 2013-25048 Filed 10-24-13; 8:45 am]

BILLING CODE 6717-01-P

#### DEPARTMENT OF ENERGY

##### Federal Energy Regulatory Commission

[Docket No. OR14-3-000]

##### Enable Bakken Crude Services, LLC; Notice of Request For Waiver

Take notice that on October 9, 2013, Enable Bakken Crude Services, LLC requested waiver of the verified statement requirements under 18 CFR 242.1(c) that would otherwise require a verified statement in support of initial committed rates, or subsequent contractual adjustments to those rates, filed pursuant to the declaratory order framework approved in Docket No. OR13-21.<sup>1</sup>

Any person desiring to intervene or to protest in this proceedings must file in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 385.214) on or before 5:00 p.m. Eastern time on the specified comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protesters parties to the proceeding. Anyone filing a motion to intervene or protest must serve a copy of that document on the Petitioner.

The Commission encourages electronic submission of protests and interventions in lieu of paper, using the FERC Online links at <http://www.ferc.gov>. To facilitate electronic service, persons with Internet access who will e-file a document and/or be

listed as a contact for an intervenor must create and validate an eRegistration account using the eRegistration link. Select the eFiling link to log on and submit the intervention or protests.

Persons unable to file electronically should submit an original and 14 copies of the intervention or protest to the Federal Energy Regulatory Commission, 888 First St. NE, Washington, DC 20426.

The filings in the above proceedings are accessible in the Commission's eLibrary system by clicking on the appropriate link in the above list. They are also available for review in the Commission's Public Reference Room in Washington, DC. There is an eSubscription link on the Web site that enables subscribers to receive email notification when a document is added to a subscribed docket(s). For assistance with any FERC Online service, please email [FERCOnlineSupport@ferc.gov](mailto:FERCOnlineSupport@ferc.gov) or call (866) 208-3676 (toll free). For TTY, call (202) 502-8659.

Comment Date: 5:00 p.m. Eastern time on October 25, 2013.

Dated: October 17, 2013.

Kimberly D. Rose,  
Secretary.

[FR Doc. 2013-25051 Filed 10-24-13; 8:45 am]

BILLING CODE 6717-01-P

#### ENVIRONMENTAL PROTECTION AGENCY

[EPA-FRL-9011-6]

##### Environmental Impact Statements; Notice of Availability

Responsible Agency: Office of Federal Activities, General Information (202) 564-7148 or <http://www.epa.gov/compliance/nepa/>.

Weekly receipt of Environmental Impact Statements

Filed 09/30/2013 Through 10/18/2013 Pursuant to 40 CFR 1506.9.

##### Notice

Section 309(a) of the Clean Air Act requires that EPA make public its comments on EISs issued by other Federal agencies. EPA's comment letters on EISs are available at: <http://www.epa.gov/compliance/nepa/eisdata.html>.

**EIS No. 20130300; Revised Draft EIS, FWS, CA, South Farallon Islands Invasive House Mouse Eradication Project, Farallon National Wildlife Refuge, Comment Period Ends: 12/09/2013, Contact: Gerry McChesney 510-792-0222 ext. 222.**

**EIS No. 20130301, Draft EIS, USAF, OK, KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown, Comment Period Ends: 12/09/2013, Contact: Jean Reynolds 210-572-9324.**

**EIS No. 20130302, Draft EIS, FERC, NY, RocaWay-Delivery Lateral and Northeast Connector Projects, Comment Period Ends: 12/09/2013, Contact: Kara Harris 202-502-6296.**  
**EIS No. 20130303, Final Supplement, FTA, HI, Honolulu Rail Transit Project, Review Period Ends: 11/25/2013, Contact: Ted Matvey 415-744-3133.**

**EIS No. 20130304, Draft Supplement, BOEM, TX, Gulf of Mexico OCS Oil and Gas Lease Sales 2014-2016 Western Planning Area Lease Sales 238, 246, and 248, Comment Period Ends: 12/09/2013, Contact: Gary Gocke 504-736-2233.**  
**EIS No. 20130305, Final Supplement, USFS, CA, Tehachapi Renewable Transmission Project, Review Period Ends: 11/25/2013, Contact: Lorraine Gerchas 628-574-5281.**

##### Amended Notices

**EIS No. 20130249, Draft EIS, USACE, LA, West Shore Lake Pontchartrain Hurricane and Storm Damage Risk Reduction, Comment Period Ends: 10/25/2013, Contact: William Klein 504-862-2540. Revision to FR Notice Published 08/23/2013; Extended Comment Period from 10/07/2013 to 10/24/2013.**

**EIS No. 20130250, Draft EIS, USACE, FL, Central Everglades Planning Project, Comment Period Ends: 11/01/2013, Contact: Gretchen Ehlinger 904-232-1682. Revision to FR Notice Published 08/30/2013; Extending Comment Period from 10/15/2013 to 11/01/2013.**

**EIS No. 20130255, Draft EIS, NOAA, 00, Amendment 7 to the 2006 Consolidated Atlantic Highly Migratory Species (HMS) Fishery Management Plan (FMP), Comment Period Ends: 12/10/2013, Contact: Thomas A. Warren 978-283-9260. Revision to FR Notice Published 08/30/2013; Extending Comment Period from 10/23/2013 to 12/10/2013.**

**EIS No. 20130260, Draft EIS, BIA, NV, Moapa Solar Energy Center, Comment Period Ends: 10/21/2013, Contact: Amy Houslein 602-379-6750. Revision to FR Notice Published 08/30/2013; Extending Comment Period from 10/23/2013 to 12/10/2013.**  
**EIS No. 20130264, Final EIS, FHWA, CO, Interstate 25 Improvements through Pueblo, Review Period Ends: 10/31/2013, Contact: Chris Horn 720-963-3017. Revision to FR Notice**

<sup>1</sup> CenterPoint Energy Bakken Crude Services, LLC, 144 FERC ¶ 61,130 (2013).

## A.7.1.1 Federal Register NOA (Continued)

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Published 09/13/2013; Extending Review Period from 10/15/13 to 10/31/2013.

**EIS No. 20130266, Draft EIS, USN, GU, The Mariana Islands Training and Testing, Comment Period Ends 12/06/2013, Contact:** John Van Name 808-471-1714. Revision to FR Notice Published 09/13/2013; Extending Comment Period from 11/12/2013 to 12/06/2013.

**EIS No. 20130276, Draft Supplement, USN, WA, Introduction of the P-8A Multi Mission Aircraft into the U.S. Navy Fleet, Comment Period Ends 12/02/2013, Contact:** Cory Zahm 757-222-4347. Revision to FR Notice Published 09/20/2013; Extending Comment Period from 11/04/2013 to 12/02/2013.

**EIS No. 20130285, Final EIS, FHWA, FL, St. Johns River Crossing, Review Period Ends 11/19/2013, Contact:** Cathy Kendal 850-553-2235. Revision to FR Notice Published 09/27/2013; Extending Review Period from 10/28/2013 to 11/19/2013.

**EIS No. 20130286, Final EIS, FHWA, FL, US 301 (SR 200) from CR 227 to CR 223, Review Period Ends 11/19/2013, Contact:** Joseph Sullivan 850-553-2248. Revision to FR Notice Published 09/27/2013; Extending Review Period from 10/29/2013 to 11/19/2013.

Dated: October 22, 2013.

**Cliff Rader,**  
Director, NEPA Compliance Division, Office of Federal Activities.  
[FR Doc. 2013-25279 Filed 10-24-13; 8:45 am]  
BILLING CODE 6560-50-P

## ENVIRONMENTAL PROTECTION AGENCY

[FRL-9901-99-Region2]

### Proposed CERCLA Settlements Relating to the Truckers Warehouse Site in Passaic, Passaic County, New Jersey

**AGENCY:** Environmental Protection Agency (EPA).

**ACTION:** Notice of proposed administrative settlements and opportunity for public comment.

**SUMMARY:** In accordance with Section 122(i) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended ("CERCLA"), notice is hereby given by the U.S. Environmental Protection Agency ("EPA"), Region 2, of three proposed Administrative Settlement Agreements for Recovery of Past Response Costs ("Agreements") pursuant to Section

122(h)(1) of CERCLA, with (1) RJS Corp., (2) Your Factory Warehouse, Inc., Douglas Marino and Mark Marino, and (3) A&S Corporation and Marie Andre ("Settling Parties"). The Settling Parties are potentially responsible parties, pursuant to Section 107(a) of CERCLA, and thus are potentially liable for response costs incurred at or in connection with the Truckers Warehouse Site ("Site"), located in Passaic, Passaic County, New Jersey. Under the Agreements, the Settling Parties agree to pay a total of \$408,748.20 to EPA for past response costs. EPA will consider all comments received and may modify or withdraw its consent to the Agreements if comments received disclose facts or considerations that indicate that the proposed Agreements are inappropriate, improper, or inadequate. EPA's response to any comments received will be available for public inspection at EPA Region 2 offices, 290 Broadway, New York, New York 10007-1866.

**DATES:** Comments must be provided by November 25, 2013.

**ADDRESSES:** The Agreements are available for public inspection at EPA Region 2 offices at 290 Broadway, New York, New York 10007-1866. Comments should reference the Truckers Warehouse Site, located in Passaic, Passaic County, New Jersey, Index Nos. CERCLA-02-2013-2019, 02-2013-2028 and 02-2013-2029. To request a copy of the Agreements, please contact the EPA employee identified below.

**FOR FURTHER INFORMATION CONTACT:** Gerard Burke, Assistant Regional Counsel, New Jersey Superfund Branch, Office of Regional Counsel, U.S. Environmental Protection Agency, 290 Broadway—17th Floor, New York, New York 10007-1866. Telephone: 212-637-3120; email at [burke.gerard@epa.gov](mailto:burke.gerard@epa.gov).

Dated: September 24, 2013.

**Walter E. Mugdan,**  
Director, Emergency and Remedial Response Division.  
[FR Doc. 2013-25264 Filed 10-24-13; 8:45 am]  
BILLING CODE 6560-50-P

## FEDERAL RESERVE SYSTEM

### Change in Bank Control Notices; Acquisitions of Shares of a Savings and Loan Holding Company

The notificants listed below have applied under the Change in Bank Control Act (12 U.S.C. 1817(j)) and the Board's Regulation LL (12 CFR part 238) to acquire shares of a savings and loan holding company. The factors that are considered in acting on the notices are

set forth in paragraph 7 of the Act (12 U.S.C. 1817(j)(7)).

The notices are available for immediate inspection at the Federal Reserve Bank indicated. The notices also will be available for inspection at the offices of the Board of Governors. Interested persons may express their views in writing to the Reserve Bank indicated for that notice or to the offices of the Board of Governors. Comments must be received not later than November 12, 2013.

A Federal Reserve Bank of Philadelphia (William Laug, Senior Vice President) 100 North 6th Street, Philadelphia, Pennsylvania 19105-1521.

1. Robert T. Strong and Kathleen M. Strong, Southampton, Pennsylvania; Brad C. Strong, Cheltenham, Pennsylvania; Julie M. Strong, Richboro, Pennsylvania; Aimoo K. Ott, Newtown, Pennsylvania; and Lawrence M. Ott, Langhorne, Pennsylvania, to jointly retain voting shares of Quaint Oak Bancorp, Inc., and thereby indirectly retain voting shares of Quaint Oak Bank, both in Southampton, Pennsylvania.

2. Amended and Restate Quaint Oak Bancorp, Inc. Employee Stock Ownership Plan, Southampton, Pennsylvania; John J. Augustine, individually and trustee, and Dolores T. Augustine, both of Lansdale, Pennsylvania; and Diane J. Colyer, individually and trustee, and Herbert C. Colyer, Jr., both of Feasterville, Pennsylvania, to retain and acquire additional voting shares of Quaint Oak Bancorp, Inc., and Quaint Oak Bank, both in Southampton, Pennsylvania.

Board of Governors of the Federal Reserve System, October 22, 2013.

**Margaret McCloskey Shanks,**  
Deputy Secretary of the Board.  
[FR Doc. 2013-25173 Filed 10-24-13; 8:45 am]  
BILLING CODE 6210-01-P

## FEDERAL RESERVE SYSTEM

### Federal Open Market Committee; Domestic Policy Directive of September 17-18, 2013

In accordance with Section 271.25 of its rules regarding availability of information (12 CFR part 271), there is set forth below the domestic policy directive issued by the Federal Open Market Committee at its meeting held on September 17-18, 2013.<sup>1</sup>

<sup>1</sup> Copies of the Minutes of the Federal Open Market Committee at its meeting held on September 17-18, 2013, which includes the domestic policy directive issued at the meeting, are available upon request to the Board of Governors of the Federal Reserve System, Washington, DC 20551. The

A.7.1.2 Draft EIS Memorandum



DEPARTMENT OF THE AIR FORCE  
AIR FORCE CIVIL ENGINEER CENTER  
JOINT BASE SAN ANTONIO LACKLAND TEXAS

MEMORANDUM FOR INTERESTED INDIVIDUALS, ORGANIZATIONS,  
PUBLIC GROUPS, GOVERNMENT AGENCIES AND OTHERS

SEP 26 2013

FROM: AFCEC/CZN  
2261 Hughes Ave, Suite 155  
JBSA Lackland, TX 78236-9853

SUBJECT: Draft Environmental Impact Statement (EIS) for the KC-46A Formal Training  
Unit (FTU) and First Main Operating Base (MOB 1) Beddown

We are pleased to provide you with a copy of the *KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Draft EIS*. This document is provided in accordance with the National Environmental Policy Act (NEPA). Libraries are requested to have this document remain available throughout the 45-day public comment period which ends on 25 November 2013. This document is also available online at <http://www.kc-46a-beddown.com>.


Notification of the availability of the Draft EIS will appear in the *Federal Register* on 11 October 2013. The EIS analyzes alternative actions for the U.S. Air Force's (USAF's) proposal to beddown KC-46A aircraft, construct supporting infrastructure, provide appropriate manpower and conduct KC-46A flight operations.

As listed below, the USAF will hold four public hearings on the Draft EIS between 28 October and 7 November 2013. The purpose of the hearings is to receive public and agency input on the proposed action/alternatives and the Draft EIS analysis. The hearings will also be announced through local media.

October 28, 2013	Altus AFB	Altus City Auditorium, 300 E. Commerce, Altus, OK 73521
October 30, 2013	McConnell AFB	Eugene M. Hughes Metropolitan Complex, Room 180, 5015 E. 29th Street N., Wichita, KS 67260
November 5, 2013	Fairchild AFB	The Lincoln Center, Monroe Ballroom, 1316 N. Lincoln Street, Spokane, WA 99201
November 7, 2013	Grand Forks AFB	Alerus Center, Hawk Meeting Room, 1200 42nd Street South., Grand Forks, ND 58201

Substantive comments presented at the public hearings and submitted to the USAF will be considered in the Final EIS. Comments must be postmarked by 25 November 2013 for incorporation into the Final EIS. Questions or comments can be submitted via the website or to the Air Force Civil Engineer Center (AFCEC) project point-of-contact: Ms. Jean Reynolds, 2261 Hughes Ave., Ste. 155, JBSA Lackland, TX 78236-9853. Additional information can be found on the project website listed above.

Sincerely,

  
J. DALE CLARK, GS-14 (AFCEC/CZN)  
Chief, Air Force NEPA Center  
Environmental Directorate

### A.7.1.3 Postcards

**KC-46A**  
13397 Lakefront Drive  
Suite 100  
Earth City, MO 63045


**Public Hearing Meeting Dates and Locations - Please Attend!**

The public hearing venues will open at 5:00 p.m. At approximately 5:30 p.m., the hearing will be called to order, followed by a USAF presentation and an opportunity for public testimony. The hearing venue will close at 8:00 p.m.

<b>Oct. 28, 2013</b>	Altus AFB, Altus City Auditorium, 300 E. Commerce, Altus, OK
<b>Oct. 30, 2013</b>	McConnell AFB, Eugene M. Hughes Metropolitan Complex, Room 180, 5015 E. 29th Street N., Wichita, KS
<b>Nov. 5, 2013</b>	Fairchild AFB, The Lincoln Center, Monroe Ballroom, 1316 N. Lincoln Street, Spokane, WA
<b>Nov. 7, 2013</b>	Grand Forks AFB, Alerus Center, Hawk Meeting Room, 1200 42nd Street S., Grand Forks, ND

Formal Training Unit (FTU) &  
First Main Operating Base (MOB 1)

**KC-46A  
Beddown**



U.S. AIR FORCE

The U.S. Air Force (USAF) has prepared a Draft Environmental Impact Statement (EIS) for public review. The Draft EIS includes analysis of the potential environmental impacts associated with the proposal to beddown KC-46A tanker aircraft, associated infrastructure, and manpower for the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) at existing active duty USAF installations within the continental United States.

The USAF is soliciting comments on the Draft EIS from interested local, state, and federal agencies, as well as interested members of the public and others. The USAF will hold public hearings, advertised on the back of this postcard, to provide the public with an opportunity to learn about the proposal and provide input.

Review of the Draft EIS is an important part of the environmental process. Public input supports the USAF in making informed decisions. Please review a copy of the Draft EIS and provide comments. Copies can be obtained as follows:

- ☒ Download a copy from: [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com).
- ☒ Review a hardcopy at one of the libraries listed to the right.
- ☒ Request a hardcopy or electronic copy on CD from the contact below.

Please submit comments on the Draft EIS before  
**November 25, 2013, at the public hearings or in writing to:**  
Ms. Jean Reynolds, USAF AFCEC/CZN, 2261 Hughes Avenue, Suite 155,  
JBSA Lackland AFB, TX 78236-9853

Comments may also be submitted electronically to:  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

**Libraries Holding Copies of the Draft EIS:**

- Altus Public Library, 421 N. Hudson Street, Altus, OK
- Lawton Public Library, 110 SW 4th Street, Lawton, OK
- Altus AFB Base Library, 109 E Avenue, Building 65, Altus AFB, OK
- Amarillo Public Library, 413 Southeast 4th Avenue, Amarillo, TX
- Western Plains Library System, 501 S. 28th Street, Clinton, OK
- Mahon Public Library, 1306 9th Street, Lubbock, TX
- Summer Glen Library, 4205 Basswood Boulevard, Fort Worth, TX
- Spokane Public Library, 906 West Main Avenue, Spokane, WA
- Fairchild AFB Library, 2 W. Castle Street, Fairchild AFB, WA
- Grand Forks Public Library, 2110 Library Circle, Grand Forks, ND
- Grand Forks AFB Library, 511 Holzapfel Street, Grand Forks AFB, ND
- Central Library, 223 S. Main, Wichita, KS
- McConnell AFB Library, 53476 Wichita Street, Building 412, McConnell AFB, KS
- Topeka & Shawnee County Public Library, 1515 Southwest 10th Avenue, Topeka, KS

### A.7.1.3 Postcards (Continued)

**KC-46A**  
13397 Lakefront Drive  
Suite 100  
Earth City, MO 63045


## Public Hearings for the KC-46A FTU & MOB 1 Beddown EIS Postponed

Public hearings that were scheduled for October 28 for Altus AFB and October 30 for McConnell AFB have been postponed due to the government shutdown. These hearings will be rescheduled; and the new dates will be provided in additional mailings, newspaper advertisements, and on the project website. Depending upon the length of the shutdown, the public hearings scheduled for November 5 for Fairchild AFB and November 7 for Grand Forks AFB may be postponed as well. Please check the website for the latest information.

Formal Training Unit (FTU) &  
First Main Operating Base (MOB 1)

## KC-46A Beddown





### PUBLIC HEARINGS FOR THE KC-46A FTU and MOB 1 BEDDOWN DRAFT EIS HAVE BEEN POSTPONED.


The U.S. Air Force (USAF) has prepared a Draft Environmental Impact Statement (EIS) for public review. The Draft EIS is now available for public review and comment; however, the public hearings that were scheduled for October 28 and 30 have been postponed due to the government shutdown. The public hearings scheduled for November 5 and 7 may be postponed as well. New dates for public hearings will be scheduled once the government shutdown has concluded. These dates will be provided by additional mailings, newspaper advertisements and on the project website.

Current information and project updates will be posted at:  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

The public comment period was previously scheduled to end on November 25, 2013. This period will be extended to allow suitable time for public comment after the public hearings are held.

Questions or comments may be submitted to:  
Ms. Jean Reynolds, USAF AFCEC/CZN, 2261 Hughes Avenue, Suite 155,  
JBSA Lackland AFB, TX 78236-9853

Comments may also be submitted electronically to:  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

A.7.1.3 Postcards (Continued)

**KC-46A**  
13397 Lakefront Drive  
Suite 100  
Earth City, MO 63045

**Public Hearing Rescheduled  
New Dates and Locations!**

The public hearing venues will open at 5:00 p.m.  
At approximately 5:30 p.m., the hearing will be  
called to order, followed by a USAF presentation  
and an opportunity for public comment. The  
hearing venue will close at 8:00 p.m.

**Nov. 12, 2013** McConnell AFB, Eugene  
M. Hughes Metropolitan  
Complex, Room 180, 5015  
E. 29th Street N., Wichita, KS

**Nov. 14, 2013** Altus AFB, Southwest  
Technology Center,  
711 W. Tamarack Road,  
Altus, OK

**Nov. 18, 2013** Grand Forks AFB, Alerus  
Center, Hawk Meeting Room,  
1200 42nd Street S.,  
Grand Forks, ND

**Nov. 20, 2013** Fairchild AFB, The Lincoln  
Center, Monroe Ballroom,  
1316 N. Lincoln Street,  
Spokane, WA



**PUBLIC HEARINGS FOR THE KC-46A  
FTU and MOB 1 BEDDOWN DRAFT EIS  
HAVE BEEN RESCHEDULED.**

The U.S. Air Force (USAF) has released a Draft Environmental Impact Statement (EIS) for public review and comment. However, the public hearings that were scheduled for October 28 and 30 and November 5 and 7 were postponed due to the government shutdown. These public hearings have now been rescheduled. The new date, time, and location information for each of the public hearings is shown on the reverse side of this postcard and on the project website.

Current information and project updates will be posted at:  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

The public comment period was previously scheduled to end on November 25, 2013. Due to delays associated with the government shutdown, this period has been extended to end on December 9, 2013.

Questions or comments may be submitted to:  
Ms. Jean Reynolds, USAF AFCEC/CZN, 2261 Hughes Avenue, Suite 155,  
JBSA Lackland AFB, TX 78236-9853

Comments may also be submitted electronically to:  
[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)



*A.7.1.4 Newspaper Advertisements and Media Releases***Table A-2. Newspaper Advertisements, Public Service Announcements, and Press Releases**

<b>Media Format</b>	<b>Postponed Public Hearing Release/Publication Date(s)</b>
<b>Newspaper Advertisements</b>	
<i>Altus Times</i> (Altus AFB, OK)	Sunday, 27 October 2013
<i>Wichita Eagle</i> (McConnell AFB, KS)	Sunday, 27 October 2013
<i>Amarillo Globe News</i> (Amarillo International Airport, TX)	Sunday, 27 October 2013
<i>Clinton Daily News</i> (Clinton-Sherman Airport, OK)	Saturday, 26 October 2013
<i>Fort Worth Star-Telegram</i> (Fort Worth Alliance Airport, TX)	Sunday, 27 October 2013
<i>Lawton Constitution</i> (Lawton-Ft. Sill Regional Airport, OK)	Sunday, 27 October 2013
<i>Lubbock Avalanche-Journal</i> (Lubbock International Airport, TX)	Sunday, 27 October 2013
<i>Topeka Capital-Journal</i> (Forbes Field, KS)	Sunday, 27 October 2013
<i>Spokesman-Review</i> (Fairchild AFB, WA)	Sunday, 27 October 2013
<i>Grand Forks Herald</i> (Grand Forks AFB, ND)	Sunday, 27 October 2013
<b>Public Service Announcements and Press Releases</b>	
Altus AFB, OK	27 October through 14 November 2013
McConnell AFB, KS	27 October through 12 November 2013
Fairchild AFB, WA	27 October through 20 November 2013
Grand Forks AFB, ND	27 October through 18 November 2013

## A.7.1.4 Newspaper Advertisements and Media Releases (Continued)

B 10 Main

PAGE 10 • WEDNESDAY • OCTOBER 27, 2013

NORTHWEST

THE SPOKESMAN-REVIEW

## That's NEWS to you ANSWERS

Here are the answers to this week's news quiz:

1. E. "Near Nature, Near Perfect" is not on the con. "City of Choice" is.
2. A. KSPS was formerly a part of Spokane Public Schools.
3. D. The average rent for an apartment in Spokane in 2013 is \$699. It was \$697 in 2012.
4. A. Grimes received the French Legion of Honor last week for his services in the war that helped liberate France from Nazi German occupation.

Now that you've had a chance to warm up your news sense, why not go online to [spokesman.com/newsquiz/](http://spokesman.com/newsquiz/)? Top entries go into a drawing for a \$50 gift card to the

Denver Hotel, and all entries this week go into a drawing for movie tickets. To give our newspaper readers a leg up, some of the questions in this quiz also appear online.

**Last week's winners** are Wilma Flanagan, of Spokane, who won the gift card, and Steve Goodman, of Post Falls, who won movie tickets.

## Gay couple attend Ephrata High dance

Macklemore invited couple onstage for big dance question

By Kaitlin Gillespie  
KMGillespie@spokane.com  
(509) 459-1420

As the final notes of Macklemore and Ryan Lewis' "Same Love" died in the Spokane Arena on Wednesday night, a high school senior pulled her girlfriend onto the stage.

"I knew I liked girls since I was the age of 4, but you were the first girl I ever fell in love with," Ephrata High School senior McKenna Jacobson told Chelsea Price before asking her to Saturday's homecoming dance.

The two were the first openly gay couple ever to attend the dance.

The crowd erupted into cheers as the couple embraced.



Ephrata High School senior McKenna Jacobson, left, asked her girlfriend, Chelsea Price, to be the school's homecoming dance on stage at the Macklemore and Ryan Lewis concert in Spokane on Wednesday.

**@ On the Web:**  
Videos of McKenna Jacobson asking her girlfriend to homecoming copers with this story online at [spokesman.com](http://spokesman.com)

"I started crying on-stage," said Price, a freshman at Eastern Washington University. "It was really heartwarming."

Jacobson tried to contact Macklemore about a month before the concert to set the moment up, but gave up when she didn't hear anything. But on a whim, Jacobson's mother, Dorothy Harris, contacted Macklemore's media representative the day of the concert.

"McKenna and her dad and I were on the way over to the concert, and one of the producers called us and said, 'Hey, we want to make this happen,'" Harris said. "It literally happened that day."

Jacobson kept the call a secret from Price, presenting her with a pair of backstage passes. Price thought the two were just going to hang out there and listen to a few songs. Then Mackle-

more called them onstage after performing "Same Love," his platinum-selling song about marriage equality.

"It was really amazing and humbling," Jacobson said. "When we walked out on the stage, it was instant support."

The moment "was really genuine," Harris said.

"They'll remember this for the rest of their lives," Harris said. "It was a really great affirming moment."

The two have been dating for 10 months. They met when they were playing on opposing high school basketball teams. Price is a graduate of Prosser High School.

Their relationship started in secret, Price said. The two dated for six months without telling anyone, then Price moved in with Jacobson and her family last summer before she started college.

"We've come a long way," Price said.

Saturday was a whirlwind for the couple: They got their hair and nails done, then snapped a few quick photos before the sale with six of their friends in a limo to Leavenworth for dinner before the dance at Ephrata.

But it's not the glamorous details Jacobson said she'll remember about the night. It's the step toward equality the couple is taking, she said.

"I want to remember making that statement and helping other kids realize it's OK," Jacobson said.

## Wenatchee stops pot shops

Associated Press

WENATCHEE — Marijuana businesses will not be allowed to operate in the city of Wenatchee, after the City Council voted down an exemption to city law that would have made it possible.

The 4-3 vote means it would take a change in federal law or a court order to open the city to pot-related businesses, the Wenatchee World reported.

Council members decided Thursday not to ex-

empt the manufacturing, processing and sale of adults over 21, with voters deciding to set up systems of state-licensed growers, processors and sellers. The measure put state officials in the difficult position of crafting rules for a fledgling industry barred by federal law.

Some council members who voted against the exemption said they didn't feel comfortable allowing businesses to circumvent federal law.

"Federal law is superior over the state," Councilman Bryan Campbell said. "Washington has been land-use rules to restrict the possession of pot by adults over 21, with voters deciding to set up systems of state-licensed growers, processors and sellers. The measure put state officials in the difficult position of crafting rules for a fledgling industry barred by federal law."

Cities and counties across the state have taken different approaches. Some cities have imposed moratoriums, postponing decisions. Others have allowed them but changed land-use rules to restrict where they can be located.

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**U.S. AIR FORCE**

The U.S. Air Force (USAF) invites you to Review the Draft Environmental Impact Statement (EIS) and Attend Public Hearings for the Proposed Beddown of KC-46A Tanker Aircraft for the Formal Training Unit (FTU) and the First Main Operating Base (MOB 1).

**Proposed Action and Alternatives**

Pursuant to the National Environmental Policy Act (NEPA), the USAF has prepared a Draft EIS for public review that analyzes the potential environmental impacts associated with the proposal to beddown KC-46A tanker aircraft, associated infrastructure, and manpower for the FTU and MOB 1 at existing active duty bases within the continental United States.

The Preferred Alternative for the FTU is Altus Air Force Base (AFB) in Oklahoma. The Preferred Alternative for the MOB 1 is McConnell AFB in Kansas. McConnell AFB was also evaluated as an alternative for the FTU scenario; and Altus, Fairchild, and Grand Forks AFBs were evaluated as alternatives for the MOB 1 scenario. No base would be selected to host both the FTU and MOB 1 scenarios. Along with the No Action Alternative, these alternatives were fully evaluated in the Draft EIS. The FTU squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly and operate the KC-46A aircraft. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support. The KC-46A mission could be an additive or replacement mission depending on where the aircraft is located. In addition, the USAF would use auxiliary airfields in the vicinity of the bases proposed for the FTU scenario.

**Where to Obtain the Draft EIS**

The Draft EIS is available for download at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com) and may be reviewed at the following libraries:

Altus Area Libraries: Altus Public, Lawton Public, Altus AFB, Amarillo Public, Western Plains Library System, Mahon Public, and Summerlin; Spokane Area Libraries: Spokane Public and Fairchild AFB; Grand Forks Area Libraries: Central, McConnell AFB, and Topkapi; Shawnee County Public.

**Public Hearings - Please Attend**

The USAF is soliciting comments on the Draft EIS from interested local, state, and federal agencies; federally recognized tribes; and interested members of the public. The USAF will hold public hearings to provide the public with an opportunity to learn about the proposal and provide input. Public input supports the USAF in making informed decisions.

The public hearing venues will open at 5:00 PM. At 5:30 PM, the USAF will give a brief presentation, followed by formal public testimony beginning at 6:15 PM. The hearing venue will close at 8:00 PM. All members of the public are invited. Dates for each hearing are provided below.

Nov. 12, 2013	McConnell AFB	Eugene M. Hughes Metropolitan Complex, Room 180, 5015 E. 29th Street N., Wichita, KS
Nov. 14, 2013	Altus AFB	Southwest Technology Center, 211 W. Tamarack Rd., Altus, OK
Nov. 18, 2013	Grand Forks AFB	Alexus Center, Frank Meeting Room, 1200 42nd Street S., Grand Forks, ND
Nov. 20, 2013	Fairchild AFB	The Lincoln Center, Monroe Ballroom, 1316 N. Lincoln Street, Spokane, WA

**Public Comment**

Your input is valuable and assists the USAF in making informed decisions. Comments on the Draft EIS can be submitted electronically at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com), orally or in writing at public hearings, or by providing written comments to the contact information below. For further information, please contact: Ms. Jean Reynolds, USAF AFCEG/52N, 2261 Hughes Avenue, Suite 155, JBSA Lackland TX 78236-9853

The USAF will accept comments at any time during the environmental process. However, to ensure the USAF has sufficient time to consider public input in the preparation of the Final EIS, please submit comments by 6 December 2013.

**Providence proudly welcomes Rebecca Muntean, MD to our team.**

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- Spondyloarthropathies (SpA)
- Gout
- Inflammatory myopathies
- Vasculitis
- Scleroderma
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**PROVIDENCE Medical Group**

*A.7.1.4 Newspaper Advertisements and Media Releases (Continued)*

**MEDIA RELEASE**

**FOR RELEASE ON [TBD]**

**AIR FORCE TO HOLD PUBLIC HEARINGS ON THE DRAFT ENVIRONMENTAL  
IMPACT STATEMENT (EIS) FOR THE PROPOSED KC-46A FORMAL TRAINING  
UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

**[TBD] AFB, [TBD]**

The U.S. Air Force (USAF) is holding public hearings to invite public comment on the Draft Environmental Impact Statement (EIS) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown. In accordance with the National Environmental Policy Act (NEPA), the USAF has prepared the environmental study in the form of a Draft EIS, which is currently available for public review and comment. The hearing venues will open at 5:00 P.M. The hearings will start with a USAF presentation and an opportunity for public testimony before a hearing officer and a court reporter. Written comments will also be accepted.

The Preferred Alternative for the FTU is Altus Air Force Base (AFB) in Oklahoma. The Preferred Alternative for the MOB 1 is McConnell AFB in Kansas. McConnell AFB was also evaluated as an alternative for the FTU scenario and Altus, Fairchild, and Grand Forks AFBs were evaluated as alternatives for the MOB 1 scenario. No base would be selected to host both the FTU and MOB 1 scenarios. Along with the No Action Alternative, these alternatives were fully evaluated in the Draft EIS. The FTU squadron will consist of up to eight KC-46A aircraft with a mission to train personnel to safely and effectively fly and operate the KC-46A aircraft. The MOB 1 will consist of 36 KC-46A aircraft with a mission to provide worldwide refueling, cargo, or aeromedical evacuation support. The KC-46A mission could be an additive or replacement mission depending on where the aircraft is located. In addition, the USAF would use auxiliary airfields in the vicinity of the bases proposed for the FTU scenario.

The KC-46A aircraft will replace a portion of the aging KC-135 fleet which have been the USAF's primary refueling aircraft for more than 50 years. With more refueling capacity and enhanced capabilities, improved efficiency, and increased capabilities for cargo and aeromedical evacuation, the KC-46A will provide aerial refueling support to the USAF, Navy, and Marine Corps, as well as allied nation coalition force aircraft.

Pursuant to NEPA, the USAF Draft EIS analyzes the potential environmental consequences associated with basing the KC-46A at each FTU and MOB 1 alternative base. A no-action alternative, which would not beddown KC-46A aircraft at any base, is also examined. More information can be obtained from the project web site at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com).

The USAF is soliciting comments on the Draft EIS from interested members of the public as well as interested federal, state, and local agencies and others. Public input is vital in supporting the USAF in making informed decisions, and no action will be taken until after a Final EIS and Record of Decision (ROD) are completed. The USAF will hold public hearings to provide the public with an opportunity to learn about the proposal and to provide input.

The public hearing venues will open at 5:00 P.M. At 5:30 P.M., the hearing will start with a USAF presentation, followed by formal public testimony beginning at approximately 6:15 P.M. All members of the public are invited. Public comments are encouraged. Public input supports the USAF in making more informed decisions. Dates for each hearing are:

12 November 2013	McConnell AFB	Eugene M. Hughes Metropolitan Complex, Room 180 5015 E. 29th Street North Wichita, Kansas 67260
14 November 2013	Altus AFB	Southwest Technology Center 711 W. Tamarack Road, Altus, OK 735
18 November 2013	Grand Forks AFB	Alerus Center, Hawk Meeting Room 1200 42nd Street South, Grand Forks, ND 58201
20 November 2013	Fairchild AFB	The Lincoln Center, Lincoln Ballroom, 1316 N. Lincoln Street, Spokane, Washington 99201

During the presentation, the USAF will describe the proposed action and alternatives, the purpose and reasoning behind the proposed KC-46A FTU and MOB 1 beddown, the NEPA process, and summarize the Draft Environmental Impact Statement findings. The public comment period will then begin; oral public comments will be transcribed by a court reporter.

The Draft EIS is available for download from the following website: [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com) and may be reviewed in hard copy format at the following libraries:

**Altus Area:**

- Altus Public Library, 421 N. Hudson Street, Altus, OK
- Lawton Public Library, 110 SW 4<sup>th</sup> Street, Lawton, OK
- Altus AFB Library, 109 E Avenue, Bldg. 65, Altus AFB, OK
- Amarillo Public Library, 413 SE 4<sup>th</sup> Ave, Amarillo, TX\*
- Western Plains Library System, Clinton, OK\*
- Mahon Public Library, 1306 9<sup>th</sup> St. Lubbock, TX\*
- Summer Glen Library, 4205 Basswood Blvd, Fort Worth, TX\*

**Spokane Area:**

- Spokane Public Library, 906 W Main Ave., Spokane, WA
- Fairchild AFB Library, 2 W. Castle St., Fairchild AFB, WA

**Grand Forks Area:**

- Grand Forks Public Library, 2110 Library Cir., Grand Forks, ND
- Grand Forks AFB Library, 511 Holzapple Street, Grand Forks AFB, ND

**Wichita Area:**

- Central Library, 223 S. Main, Wichita, KS\*
- McConnell AFB Library, 53476 Wichita St. Bldg. 412, McConnell AFB, KS
- Topeka & Shawnee County Public Library, 1515 SW 10<sup>th</sup> Ave., Topeka, KS\*

\* - FTU Mission Auxiliary Airfield Location Library

Comments on the Draft EIS can be submitted electronically at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com), orally or in writing at public hearings, or by providing written comments to the contact information listed below. As a convenience for those sending comments by mail, a comment form is available on the website to help expedite your submission. Although comments will be accepted throughout the Draft EIS review period, to ensure consideration in the Final EIS, public input must be received by 9 December 2013. People wishing to mail comments or obtain further information should send them to:

**Ms. Jean Reynolds**  
**United States Air Force, AFCEC/CZN**  
**2261 Hughes Avenue, Suite 155,**  
**JBSA Lackland, TX 78236-9853**

#### A.7.1.4 Newspaper Advertisements and Media Releases (Continued)



floor, receiver air refueling, improved force protection and survivability, and multi-point air refueling capability.

The formal training unit and the first main operating base are scheduled to begin receiving aircraft in fiscal year 2016.

For more information contact Ms. Jean Reynolds of the Air Force Civil Engineer Center NEPA Center at 210-395-8541.

-- 30 --

Release No. 20131011-01  
Date: Oct. 11, 2013

#### **Air Force Delays KC-46A environmental public hearings**

**JOINT BASE SAN ANTONIO-LACKLAND, Texas** – The Air Force announced today that public hearings for the KC-46 Draft Environmental Impact Statement will be rescheduled due to a delay in the mandatory publication of the Draft EIS Notice of Availability in the Federal Register resulting from the government shutdown.

By regulation, the Air Force cannot begin the public hearings, originally scheduled for Oct. 28 for Altus Air Force Base, Okla., and Oct. 30 for McConnell Air Force Base, Kans., until at least 15 days after the Environmental Protection Agency publishes the NOA in the Federal Register. With the furlough of EPA personnel due to the Oct. 1 government shutdown, the required NOA cannot be published in time to meet the Air Force's original public hearing schedule. The Air Force will announce new public hearing information as soon as it becomes available.

Until the government is reopened the Air Force anticipates a week-to-week slip in the public hearing portion of its EIS schedule.

The Draft EIS is currently available for review at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com). Comments will be accepted during the government shutdown, and can be submitted electronically or by mail using the procedures outlined on the website. Once the government has reopened and EPA has published the NOA in the Federal Register, the official comment period will open and extend for 45 days from the date of publication.

Announced in May, Altus AFB is the preferred alternative for the KC-46A formal training unit, McConnell AFB is the preferred alternative for the first active-duty led KC-46A main operating base, and Fairchild AFB, Wash., and Grand Forks AFB, N.D., are the reasonable alternatives.

The KC-46A will provide improved capability, including boom and drogue refueling on the same sortie, worldwide navigation and communication, airlift capability on the entire main deck

## A.7.1.5 Draft EIS Mailing List

## ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Altus AFB Library					Altus	OK			1
Altus AFB, OK	Altus Public Library					Altus	OK			1
Altus AFB, OK	Altus/Quartz Mountain Regional Airport					Altus	OK			1
Altus AFB, OK	Amarillo Public Library					Amarillo	TX			1
Altus AFB, OK	Clinton-Sherman Industrial Airpark/OSIDA					Burns Flat	OK			1
Altus AFB, OK	Comanche Nation of Oklahoma	THPO		Arterberry	Jimmy	Lawton	OK			1
Altus AFB, OK	FAA, Southwest Region		Administrator	Bruner	Teresa	Fort Worth	TX			1
Altus AFB, OK	Fort Worth Alliance Airport			Ash	Christopher	Fort Worth	TX			1
Altus AFB, OK	Fort Worth Meacham International Airport					Fort Worth	TX			1
Altus AFB, OK	KWHN/KQ106			Esparza	Mary	Altus	OK	<b>1</b>		<b>1</b>
Altus AFB, OK	Lawton Public Library					Lawton	OK			1
Altus AFB, OK	Mahon Public Library					Lubbock	TX			1
Altus AFB, OK	National Park Service					Denver	CO			1
Altus AFB, OK	Oklahoma Natural Heritage Inventory		Agency Representative			Norman	OK			<b>1</b>
Altus AFB, OK	Osage Nation	THPO		Munkres	James	Pawhuska	OK			1
Altus AFB, OK	Preston Smith International Airport		Aviation Director	Loomis	James	Lubbock	TX			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Rick Husband Amarillo International Airport		Aviation Director	Rhodes	Patrick	Amarillo	TX			1
Altus AFB, OK	Summerglen Library					Fort Worth	TX			1
Altus AFB, OK	Texas Commission on Environmental Quality		Executive Director	Covar	Zak	Austin	TX			1
Altus AFB, OK	Texas Department of Transportation		Executive Director	Wilson	Phil	Austin	TX			1
Altus AFB, OK	Texas Historical Commission					Austin	TX			1
Altus AFB, OK	Texas Parks and Wildlife Department					Austin	TX			1
Altus AFB, OK	U.S. Fish and Wildlife Service, Southwest Region			Tuggle	Benjamin	Albuquerque	NM			1
Altus AFB, OK	USEPA, Region 6					Dallas	TX			1
Altus AFB, OK				Baker	Kevin	Altus	OK			1
Altus AFB, OK	Altus City Attorney			Coke	Catherine	Altus	OK	1	1	
Altus AFB, OK	Altus City Council		Councilmembers			Altus	OK	1	1	
Altus AFB, OK	Altus Emergency Management Services			Colston	Lloyd	Altus	OK	1		
Altus AFB, OK	Altus High School			Haught	Mark	Altus	OK	1	1	
Altus AFB, OK	Altus Police Department		Chief of Police	Patterson	Mike	Altus	OK	1	1	
Altus AFB, OK	Board of County Commissioners		Commissioners			Altus	OK	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Chamber of Commerce	Humphrey's Co-Op	Board Member	Bain	Jantz	Altus	OK	1	1	
Altus AFB, OK	Altus Police Department		Mr.	Murphy	Tim	Altus	OK	1		
Altus AFB, OK	Chamber of Commerce	First National Bank	Board Member	Bull	Kerry	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Altus Christian Academy	Board Member	Darby	Dana	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	First State Bank	Board Member	Doughty	N. Lee	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	NBC Oklahoma	Board Member	Gover	Jim	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Hokett Construction	Board Member	Hokett	Shane	Blair	OK	1	1	
Altus AFB, OK	Chamber of Commerce	southwest Technology Center	Board Member	Kerr	Rodger	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	97th AMW/CC	Board Member	Krawietz	Anthony B.	Altus AFB	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Tamarack Retirement Center	Board Member	Kruska	Mary	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	-	Board Member	Leverett	Joe	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Belles & Beaux	Board Member	Martin	Krystal	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Boeing	Board Member	Norris	Jim	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	First United Methodist Church	Board Member	Player	David	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Integris Family Care Altus	Board Member	Pruitt	Brenda	Altus	OK	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Chamber of Commerce	Agriculture Affairs Committee	Board Member	Robbins	Danny	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	City of Altus	Board Member	Webb	David	Altus	OK	1	1	
Altus AFB, OK	City of Altus		Administrator	Gray	Elizabeth	Altus	OK	1	1	
Altus AFB, OK	City of Altus City Council		Councilmembers			Altus	OK	1	1	
Altus AFB, OK	City of Altus Mayor's Office		Mayor	Webb	David	Altus	OK	1	1	
Altus AFB, OK	City of Altus Planning and Development		Planning Director	Burleson	Barbara	Altus	OK	1	1	
Altus AFB, OK	City of Altus, Attorney			Coke	Catherine	Altus	OK	1	1	
Altus AFB, OK	City of Amarillo Mayor's Office		Mayor	Harpole	Paul	Amarillo	TX	1	1	
Altus AFB, OK	City of Amarillo Planning Department		Planning Director	Shaw	Kelley	Amarillo	TX	1	1	
Altus AFB, OK	City of Clinton Planning Department					Clinton	OK	<b>1</b>	<b>1</b>	
Altus AFB, OK	City of Elk City					Elk City	OK	<b>1</b>	<b>1</b>	
Altus AFB, OK	City of Fort Worth Mayor's Office		Mayor	Price	Betsy	Fort Worth	TX	1	1	
Altus AFB, OK	City of Fort Worth Planning and Development		Director	Harwood	Randall	Fort Worth	TX	1	1	
Altus AFB, OK	City of Lubbock					Lubbock	TX	<b>1</b>	<b>1</b>	
Altus AFB, OK	City of Lubbock Mayor's Office		Mayor	Robertson	Glen	Lubbock	TX	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Committee of 100	Lucas Farms	Chairman	Lucas	Eva	Elmer	OK	1	1	
Altus AFB, OK	Jackson County EMS			Cecil	Shaun	Altus	OK	1		
Altus AFB, OK	Jackson County Sheriff		Sherriff	Levick	Roger	Altus	OK	1		
Altus AFB, OK	Lawton Constitution			Meador	Mitch	Lawton	OK	1		
Altus AFB, OK	Lubbock County Clerk's Office			Pinion	Kelly	Lubbock	TX	1	1	
Altus AFB, OK	Lubbock International Airport					Lubbock	TX			1
Altus AFB, OK	Military Affairs Committee	Hokett Construction	Director	Hokett	Shane	Blair	OK	1	1	
Altus AFB, OK	Military Affairs Committee	-	President, Chairman	Leverett	Joe	Altus	OK			
Altus AFB, OK	Oklahoma Highway Patrol in Altus		Mr.	Freeman	Johnny	Altus	OK	1		
Altus AFB, OK	Potter County Clerk's Office			Smith	Julie	Amarillo	TX	1	1	
Altus AFB, OK	Southwest Technical College			McCormack	Douglas	Altus	OK	1	1	
Altus AFB, OK	State Senate, Texas District 10		Senator	Davis	Wendy	Fort Worth	TX	1	1	
Altus AFB, OK	State Senate, Texas District 28		Senator	Duncan	Robert L	Lubbock	TX	1	1	
Altus AFB, OK	State Senate, Texas District 31		Senator	Seliger	Kel	Amarillo	TX	1	1	
Altus AFB, OK	State Senate, Texas District 9		Senator	Hancock	Kelly	Austin	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Frullo	John M.	Lubbock	TX	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	State, House of Representatives		Representative	Perry	Charles	Lubbock	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Price	Four	Amarillo	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Strickland	Jonathan	Austin	TX	1	1	
Altus AFB, OK	Tarrant County Clerk's Office			Garcia	Mary Louise	Fort Worth	TX	1	1	
Altus AFB, OK	Texas Governor's Office		Governor	Perry	Rick	Austin	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Lucas	Frank D.	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Marchant	Kenny	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Marchant	Kenny	Irving	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Neugebauer	Randy	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Neugebauer	Randy	Lubbock	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Thornberry	Mac	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Thornberry	Mac	Amarillo	TX	1	1	
Altus AFB, OK	U.S. Senate, Oklahoma		Senator	Coburn	Tom	Washington	DC	1	1	
Altus AFB, OK	U.S. Senate, Oklahoma		Senator	Inhofe	James M.	Washington	DC	1	1	
Altus AFB, OK	U.S. Senate, Texas		Senator	Cornyn	John	Washington	DC	1	1	
Altus AFB, OK	U.S. Senate, Texas		Senator	Cornyn	John	Lubbock	TX	1	1	

*A.7.1.5 Draft EIS Mailing List (Continued)*

**ALTUS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	U.S. Senate, Texas		Senator	Cruz	Ted	Washington	DC	1	1	
Altus AFB, OK	U.S. Senate, Texas		Senator	Cruz	Ted	Houston	TX	1	1	
Altus AFB, OK	Western Oklahoma State College			Greer	Kristy	Altus	OK	1	1	
Altus AFB, OK				Jones	Christopher & Deanna	Altus	OK			1
Altus AFB, OK				Moore	Tom	Altus	OK	1		

## A.7.1.5 Draft EIS Mailing List (Continued)

## FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	City of Airway Heights			Tripp	Albert	Airway Heights	WA			1
Fairchild AFB, WA	Coeur d'Alene Tribe		Chairman	Allen	Chief	Plummer	ID			1
Fairchild AFB, WA	Coeur d'Alene Tribe	THPO		Wagner	Jill	Plummer	ID			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation	THPO	Acting THPO	Moura	Guy	Nespelem	WA			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation		Business Council Chairman	Finley	Michael	Nespelem	WA			1
Fairchild AFB, WA	Department of Archaeology & Historic Preservation		State Historic Preservation Officer	Brooks	Allyson	Olympia	WA			1
Fairchild AFB, WA	Department of Ecology Washington State		Water Quality	Duncan	Dave	Spokane	WA			1
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife Washington		Regional Director	Andrews	John	Spokane Valley	WA			1
Fairchild AFB, WA	Department of Transportation Idaho		Executive Director	Wilson	Phil	Austin	TX			1
Fairchild AFB, WA	Department of Transportation Washington		Se Transportation	Peterson	Lynn	Olympia	WA			1
Fairchild AFB, WA	Fairchild AFB Library					Fairchild AFB	WA			1
Fairchild AFB, WA	Fairfield Inn and Suites			Swavely	Paul	Spokane	WA			1
Fairchild AFB, WA	FAA, Northwest Mountain		Regional Admin.	Vernon	Kathryn	Renton	WA			1
Fairchild AFB, WA	GSI			Jawara	Sandra	Spokane	WA			1
Fairchild AFB, WA	Kalispell Indian Community		Chairman	Nenema	Glen	Usk	MN			1

## A.7.1.5 Draft EIS Mailing List (Continued)

## FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Neighborhood Alliance			Krupp	Paul	Spokane	WA			1
Fairchild AFB, WA	Spokane International Airport			Holmes	David	Spokane	WA			1
Fairchild AFB, WA	Spokane Public Library					Spokane	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians		Chairman	Peone	Rudy	Wellpinit	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians	THPO		Abrahamson	Randy	Wellpinit	WA			1
Fairchild AFB, WA	U.S. Forest Service, Colville National Forest		Supervisor	West	Laura Jo	Colville	WA			1
Fairchild AFB, WA	U.S. Forest Service, Region 6, Pacific NW		Director	Linares	Jose	Portland	OR			1
Fairchild AFB, WA	USEPA Region 10		Regional Administrator	McLerran	Dennis E.	Seattle	WA			1
Fairchild AFB, WA	City of Airway Heights			Tripp	Albert	Airway Heights	WA			1
Fairchild AFB, WA	Coeur d'Alene Tribe		Chairman	Allen	Chief	Plummer	ID			1
Fairchild AFB, WA	Coeur d'Alene Tribe	THPO		Wagner	Jill	Plummer	ID			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation	THPO	Acting THPO	Moura	Guy	Nespelem	WA			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation		Business Council Chairman	Finley	Michael	Nespelem	WA			1
Fairchild AFB, WA	Dept. of Archaeology & Historic Preservation		State Historic Preservation Officer	Brooks	Allyson	Olympia	WA			1
Fairchild AFB, WA	Department of Ecology Washington State		Water Quality	Duncan	Dave	Spokane	WA			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife Washington		Regional Director	Andrews	John	Spokane Valley	WA			1
Fairchild AFB, WA	Department of Transportation Idaho		Executive Director	Wilson	Phil	Austin	TX			1
Fairchild AFB, WA	Department of Transportation Washington		Secretary of Transportation	Peterson	Lynn	Olympia	WA			1
Fairchild AFB, WA	Fairchild AFB Library					Fairchild AFB	WA			1
Fairchild AFB, WA	Fairfield Inn and Suites			Swavely	Paul	Spokane	WA			1
Fairchild AFB, WA	FAA, Northwest Mountain		Regional Administrator	Vernon	Kathryn	Renton	WA			1
Fairchild AFB, WA	GSI			Jawara	Sandra	Spokane	WA			1
Fairchild AFB, WA	Kalispell Indian Community		Chairman	Nenema	Glen	Usk	MN			1
Fairchild AFB, WA	Neighborhood Alliance			Krupp	Paul	Spokane	WA			1
Fairchild AFB, WA	Spokane International Airport			Holmes	David	Spokane	WA			1
Fairchild AFB, WA	Spokane Public Library					Spokane	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians		Chairman	Peone	Rudy	Wellpinit	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians	THPO		Abrahamson	Randy	Wellpinit	WA			1
Fairchild AFB, WA	U.S. Forest Service, Colville National Forest		Supervisor	West	Laura Jo	Colville	WA			1
Fairchild AFB, WA	U.S. Forest Service, Region 6, Pacific Northwest		Director	Linares	Jose	Portland	OR			1
Fairchild AFB, WA	USEPA Region 10		Regional Administrator	McLerran	Dennis E.	Seattle	WA			1

## A.7.1.5 Draft EIS Mailing List (Continued)

## FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	USFWS Pacific Region		Regional Director	Thorson	Robyn	Portland	OR			1
Fairchild AFB, WA	USFWS Upper Columbia Office		NEPA Program Coordinator			Spokane Valley	WA			1
Fairchild AFB, WA	Washington Air National Guard					Fairchild AFB	WA			1
Fairchild AFB, WA	Washington Pilots Association		Legislative Director	Townsley	John	Spokane	WA			1
Fairchild AFB, WA				Brantner	Christy	Spokane	WA			1
Fairchild AFB, WA	Blair Elementary School					Fairchild AFB	WA	1	1	
Fairchild AFB, WA	City of Airway Heights Planning Department		City Planner	Braaten	Derrick	Airway Heights	WA	1	1	
Fairchild AFB, WA	City of Airway Heights Planning Department					A. Heights	WA	1	1	
Fairchild AFB, WA	City of Coeur d'Alene Planning Commission		Planning Director	Yadon	Dave	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	City of Spokane			Condon	David	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane			Weinand	Kathleen	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane Mayor's Office		Mayor	Condon	David	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane Planning and Development		Planning Director	Chesney	Scott	Spokane	WA	1	1	
Fairchild AFB, WA	Forward Fairchild			Bever	Greg	Spokane	WA			1
Fairchild AFB, WA				Sawdy	Richard	Spokane	WA	1		
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife		Regional Director	Gamon	John					1

## A.7.1.5 Draft EIS Mailing List (Continued)

**FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Garco Construction			Barnett	Hollis	Spokane	WA	1		
Fairchild AFB, WA	Gonzaga University			Pritchard, Jr.	Russell	Spokane	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Crouse	Larry	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Holy	Jeff	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Ormsby	Timm	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Parker	Kevin	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Riccelli	Marcus	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Shea	Matt	Olympia	WA	1	1	
Fairchild AFB, WA	Idaho Governor's Office		Governor	Otter	C.L. "Butch"	Boise	ID	1	1	
Fairchild AFB, WA	International Triad Alliance			McCoy	Matt	Spokane	WA	1		
Fairchild AFB, WA	Lydig Construction			Reese	Tom	Spokane	WA	1		
Fairchild AFB, WA	Medical Lake School District			Munther	Terry	Medical Lake	WA	1	1	
Fairchild AFB, WA	Park College 92 MSS/DPE					Fairchild AFB	WA	1	1	
Fairchild AFB, WA	Spokane Association of Realtors			Higgins	Rob	Spokane	WA			
Fairchild AFB, WA	Spokane Community College			Brown	Terrance	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane County		County Clerk			Spokane	WA	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

## FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Spokane County Commissioner			French	Albert	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane County Planning Department					Spokane	WA	1	1	
Fairchild AFB, WA	Spokane Regional Clean Air Agency		Air Quality Engineer	Southwell	Joe	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane Transit Authority			Meyer	E. Susan	Spokane	WA	1	1	
Fairchild AFB, WA	STRATA			Murphey	James	Spokane	WA	1		
Fairchild AFB, WA	U.S. House of Representatives		Congresswoman	McMorris Rodgers	Cathy	Washington	DC	1	1	
Fairchild AFB, WA	U.S. House of Representatives		Congresswoman	McMorris Rodgers	Cathy	Spokane	WA	1	1	
Fairchild AFB, WA	U.S. House of Representatives		Congressman	Labrador	Raul R.	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. House of Representatives		Congressman	Labrador	Raul R.	Washington	DC	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Crapo	Mike	Washington	DC	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Crapo	Mike	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Risch	James E.	Washington	DC	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Risch	James E.	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Cantwell	Maria	Washington	DC	1	1	
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Cantwell	Maria	Spokane	WA	1	1	
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Murray	Patty	Washington	DC	1	1	

*A.7.1.5 Draft EIS Mailing List (Continued)*

**FAIRCHILD AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Murray	Patty	Spokane	WA	1	1	
Fairchild AFB, WA	Washington Governor's Office		Governor	Inslee	Jay	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 3		Senator	Billig	Andy	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 4		Senator	Padden	Mike	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 6		Senator	Baumgartner	Michael	Olympia	WA	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

## GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Base Realignment Impact Center			Blair	Diane	Grand Forks	ND			1
Grand Forks AFB, ND	Bois Forte Band of Chippewa Indians		Chairman	Leecy	Kevin	Nett Lake	MN			1
Grand Forks AFB, ND	Bois Forte Band of Chippewa Indians	THPO		Berens	Rosemary	Nett Lake	MN			1
Grand Forks AFB, ND	USBLA, Great Plains Regional Office		Deputy Regional Director			Aberdeen	SD			1
Grand Forks AFB, ND	U.S. Bureau of Reclamation		Commissioner	Johnson	Robert W.	Washington	DC			1
Grand Forks AFB, ND	U.S. Bureau of Reclamation		Area Manager	Breitzman	Dennis E.	Bismarck	ND			1
Grand Forks AFB, ND	U.S. Bureau of Reclamation		Regional Director	Ryan	Michael J.	Billings	MT			1
Grand Forks AFB, ND	Cheyenne River Sioux Tribe		Chairman	Keckler	Kevin	Eagle Butte	SD			1
Grand Forks AFB, ND	Cheyenne River Sioux Tribe	THPO		Vance	Steve	Eagle Butte	SD			1
Grand Forks AFB, ND	City of Grand Forks			Storstad	Maureen	Grand Forks	ND			1
Grand Forks AFB, ND	North Dakota Commission on Indian Affairs		Executive Director	Painte	Deborah A.	Bismarck	ND			1
Grand Forks AFB, ND	Council on Environmental Quality			Greczmiel	Horst	Washington	DC			1
Grand Forks AFB, ND	Crow Creek Sioux Tribe		Chairman	Sazue, Sr.	Brandon	Fort Thompson	SD			1
Grand Forks AFB, ND	Crow Creek Sioux Tribe	THPO		Wells	Wanda	Fort Thompson	SD			1
Grand Forks AFB, ND	FAA, Minn. Air Route Traffic Control Center			Nelson	Kelly	Minneapolis	MN			1
Grand Forks AFB, ND	FAA, Air Traffic Organization			Page, Jr.	John H.	Washington	DC			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	FAA, Great Lakes Region		Regional Administrator	Cooper	Barry	Des Plaines	IL			1
Grand Forks AFB, ND	FAA, Great Lakes Region			Obenauer	Steve	Bismarck	ND			1
Grand Forks AFB, ND	FAA, Southwest Region			McGrath	Roger	Fort Worth	TX			1
Grand Forks AFB, ND	Flandreau Santee Sioux		President	Reider	Anthony	Flandeau	SD			1
Grand Forks AFB, ND	Flandreau Santee Sioux	THPO		Weston	James B. "JB"	Flandeau	SD			1
Grand Forks AFB, ND	Fond du Lac Band of Lake Superior Chippewa		Chairwoman	Diver	Karen R.	Cloquet	MN			1
Grand Forks AFB, ND	Fond du Lac Band of Lake Superior Chippewa	THPO		Defoe	LeRoy	Cloquet	MN			1
Grand Forks AFB, ND	Grand Forks AFB Library					Grand Forks AFB	ND			1
Grand Forks AFB, ND	Grand Forks AFB, Base Ambassador			Towers	Ken	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Chamber of Commerce			Strom	Kimberly	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Public Library					Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Regional Airport Authority		Facility Manager	Johnson	Steve	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks School District			Ericson	Vicki	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Portage Band of Lake Superior Chippewa		Chairman	Deschampe	Norman W.	Grand Portage	MN			1
Grand Forks AFB, ND	Grand Portage Band of Lake Superior Chippewa	THPO		Gagnon	Mary Ann	Grand Portage	MN			1
Grand Forks AFB, ND	Job Service North Dakota			Fillion	Roy	Grand Forks	ND			1
Grand Forks AFB, ND	Leech Lake Band of Ojibwe		Chairwoman	Jones	Carri	Cas Lake	MN			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Leech Lake Band of Ojibwe	THPO		Lemon	Gina	Cas Lake	MN			1
Grand Forks AFB, ND	Leighton Broadcasting			Sanden	Duaine	Mentor	MN			1
Grand Forks AFB, ND	Lower Brule Sioux Tribe		Chairman	Jandreque	Michael	Lower Brule	SD			1
Grand Forks AFB, ND	Lower Brule Sioux Tribe	THPO		Green	Clair	Lower Brule	SD			1
Grand Forks AFB, ND	Lower Sioux Indian Community		Tribal President	Prescott	Denny	Morton	MN			1
Grand Forks AFB, ND	Lower Sioux Indian Community	THPO		Morse	Anthony	Morton	MN			1
Grand Forks AFB, ND	MAC Committee			Schorsch	Pam	Grand Forks	ND			1
Grand Forks AFB, ND	Mandan, Hidatsa & Arikara Nation		Chairman	Hall	Tex G.	New Town	ND			1
Grand Forks AFB, ND	Mandan, Hidatsa & Arikara Nation	THPO		Crowsbreast	Elgin	New Town	ND			1
Grand Forks AFB, ND	Mille Lacs Band of Ojibwe		Chief Executive	Melanie	Benjamin	Onamia	MN			1
Grand Forks AFB, ND	Mille Lacs Band of Ojibwe	THPO		Weyaus	Natalie	Onamia	MN			1
Grand Forks AFB, ND	National Air Transportation Assoc.					Alexandria	VA			1
Grand Forks AFB, ND	Natural Resources Conservation Service		Acting Chief	Weller	Jason	Washington	DC			1
Grand Forks AFB, ND	Natural Resources Conservation Service		State Conservationist	Flores	J R	Bismarck	ND			1
Grand Forks AFB, ND	NDDOT District 3 - Devils Lake		District Engineer	Swenson	W.	Devils Lake	ND			1
Grand Forks AFB, ND	NDDOT District 6 - Grand Forks		District Engineer	Noehre	L.	Grand Forks	ND			1
Grand Forks AFB, ND	Nokak Electric Cooperative			Breidenbach	Steve	Grand Forks	ND			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Aeronautics Commission		Executive Director	Ness	Gary R.	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Army National Guard					Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Army National Guard					Devils Lake	ND			1
Grand Forks AFB, ND	North Dakota Aviation Association		Chairman	Simmers	Robert	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Agriculture		Commissioner	Goehring	Doug	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Commerce					Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Health			Dwelle	Terry	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Transportation		Director	Levi	Grant	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Division of Community Services		Director	Govig	Paul	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Energy Department		Energy and Information Security Program Manager	Rotenberger	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Forest Service		State Forester	Kotchman	Larry	Bottineu	ND			1
Grand Forks AFB, ND	North Dakota Game and Fish		Pilot	Faught	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Game and Fish Department		Director	Steinwand	Terry	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Parks and Recreation Department		Director	Zimmerman	Mark	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Pilots Association		President	Hanson	Paul	Emerado	ND			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Small Business Development Center			Randall	Chuck	Grand Forks	ND			1
Grand Forks AFB, ND	North Dakota State Water Commission		Research Analyst	Knudtson	Larry	Bismarck	ND			1
Grand Forks AFB, ND	Oglala Sioux Tribe		President	Brewer	Bryan	Pine Ridge	SD			1
Grand Forks AFB, ND	Oglala Sioux Tribe	THPO		Mesteth	Wilmer	Pine Ridge	SD			1
Grand Forks AFB, ND	Prairie Island Indian Community		Tribal Chairperson	Kohnen	Audrey	Welch	MN			1
Grand Forks AFB, ND	Red Lake Band of Chippewa		Chairman	Jourdain	Floyd	Red Lake	MN			1
Grand Forks AFB, ND	Rosebud Sioux Tribe of Indians		President	Scott	Cyril	Rosebud	SD			1
Grand Forks AFB, ND	Rosebud Sioux Tribe of Indians	THPO		Eagle Bear	Russell	Rosebud	SD			1
Grand Forks AFB, ND	Shakopee Mdewakanton Sioux Community		Chairman	Vig	Charlie	Prior Lake	MN			1
Grand Forks AFB, ND	Shakopee Mdewakanton Sioux Community	THPO		Wabasha	Leonard	Prior Lake	MN			1
Grand Forks AFB, ND	Sisseton-Wahpeton Oyate		Chairman	Shepherd	Robert	Agency Village	SD			1
Grand Forks AFB, ND	Sisseton-Wahpeton Oyate	THPO		Desrosiers	Dianne	Sisseton	SD			1
Grand Forks AFB, ND	Spirit Lake Tribe		Chairperson	Yankton	Roger	Fort Totten	ND			1
Grand Forks AFB, ND	Standing Rock Sioux Tribe		Chairman	Murphy	Charles	Fort Yates	ND			1
Grand Forks AFB, ND	Standing Rock Sioux Tribe	THPO		Young	Waste'Win	Fort Yates	ND			1
Grand Forks AFB, ND	State Historical Society of North Dakota		State Historic Preservation Officer	Paaverud, Jr.	Merlan	Bismarck	ND			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Turtle Mountain Band of Chippewa		Chairman	St. Clair	Merle	Belcourt	ND			1
Grand Forks AFB, ND	Turtle Mountain Band of Chippewa	THPO		Ferris	Kade	Belcourt	ND			1
Grand Forks AFB, ND	U.S. Advisory Council on Historic Preservation			Kilma	Don	Washington	DC			1
Grand Forks AFB, ND	U.S. Geological Survey		Supervisory Hydrologist	Lambrecht	Jason M.	Grand Forks	ND			1
Grand Forks AFB, ND	U.S. Geological Survey National Center		Acting Director	Kimball	Suzette	Reston	VA			1
Grand Forks AFB, ND	UND Aerospace			Trapnell	Ben	Grand Forks	ND			1
Grand Forks AFB, ND	Unmanned Applications Institute International			McDonald	Doug	Grand Forks	ND			1
Grand Forks AFB, ND	Upper Sioux Indian Community		Chairman	Jensvold	Kevin	Granite Falls	MN			1
Grand Forks AFB, ND	Upper Sioux Indian Community	THPO		LaBatte	Marlow	Granite Falls	MN			1
Grand Forks AFB, ND	USEPA Region 10		Acting Regional Administrator	Rushin	Carol	Denver	CO			1
Grand Forks AFB, ND	USEPA Region 8			Allen	Dana	Denver	CO			1
Grand Forks AFB, ND	USEPA Region 9			Hanley	James	Denver	CO			1
Grand Forks AFB, ND	USFWS			Ramirez	Michael	Devils Lake	ND			1
Grand Forks AFB, ND	USFWS		Pilot	Bayless	Shawn	Bismarck	ND			1
Grand Forks AFB, ND	USFWS Devils Lake		Deputy Project Leader	Alfonso	Jim	Devils Lake	ND			1
Grand Forks AFB, ND	USFWS Mountain-Prairie Region		Regional Director	Walsh	Noreen	Lakewood	CO			1

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	USFWS North Dakota Field Office		Mr.	Towner	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	Veterans Service Office			Lombardi	Lou	Grand Forks	ND			1
Grand Forks AFB, ND	White Earth Band of Minnesota Chippewa		Chairwoman	Vizenor	Erma	White Earth	MN			1
Grand Forks AFB, ND	White Earth Band of Minnesota Chippewa	THPO		Lampi	Renee	White Earth	MN			1
Grand Forks AFB, ND	Yankton Sioux Tribe		Chairman	Cournoyer	Thurman	Wagner	SD			1
Grand Forks AFB, ND	Yankton Sioux Tribe	THPO	THPO	Gravatt	Lana M.	Wagner	SD			1
Grand Forks AFB, ND				Richards	Randy	Grand Forks	ND			1
Grand Forks AFB, ND				Richards	T.	Grand Forks	ND			1
Grand Forks AFB, ND				Ash	Duaine	Devils Lake	ND	1		
Grand Forks AFB, ND				Brusseau	Paul	Walhalla	ND	1		
Grand Forks AFB, ND				Kragnes	David	Felton	MN	1		
Grand Forks AFB, ND				Spivey	Anna	Langdon	ND	1		
Grand Forks AFB, ND	Alpine Aviation, Inc					Provo	UT	1	1	
Grand Forks AFB, ND	Cavalier County Commission		Commissioners			Langdon	ND	1	1	
Grand Forks AFB, ND	City of East Grand Forks Mayor's Office		Mayor	Stauss	Lynn	East Grand Forks	MN	1	1	
Grand Forks AFB, ND	City of Grand Forks			Kreun	Curt	Grand Forks	ND	1	1	
Grand Forks AFB, ND	City of Grand Forks		Mayor	Brown	Michael	Grand Forks	ND	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	City of Grand Forks Planning Department		City Planner	Gengler	Brad	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Civil Air Patrol (CAP)			Schuler	Ken	Grand Forks	ND	1	1	
Grand Forks AFB, ND	County of Grand Forks Planning & Zoning		County Planner	Magnunson	Lane	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Devils Lake Wetland Management District		District Wildlife Biologist	Fisher	Mark R.	Devils Lake	ND	1	1	
Grand Forks AFB, ND	Federal Aviation Administration Great Lakes Region			Cink	David	Grand Forks	ND	1	1	
Grand Forks AFB, ND	GF-EGF Chamber of Military Appreciation Committee		Chairperson	Holwerda	Danny	Grand Forks	ND			
Grand Forks AFB, ND	GFK Flight Support					Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks American Legion # 6			Green	Robert	Arvilla	ND	1		
Grand Forks AFB, ND	Grand Forks Board of Realtors			Colter	John	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Chamber of Commerce		President & CEO	Wilfahrt	Barry	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks City Council		Council Member	Gershman	Hal	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks City Council		Council Member	Glassheim	Eliot	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Commissioners		Commissioner			Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks County		Clerk/Treasurer	Drees	Vivian	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks County Board of Commissioners		Commission Chair	Triplett	Constance	Grand Forks	ND	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Grand Forks County Commissioners		Commission Chairman	Malm	Gary	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Region		President	Thiessen	Klause	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Regional Airport Authority					Grand Forks	ND			
Grand Forks AFB, ND	Greenberg Realty			Greenberg	Skip	Grand Forks	ND	1		
Grand Forks AFB, ND	National Association of State Aviation Officials					Silver Spring	MD	1	1	
Grand Forks AFB, ND	National Association of State Aviation Officials		Director	Taborsky	Larry	Bismarck	ND	1	1	
Grand Forks AFB, ND	National Business Aviation Association					Washington	DC	1	1	
Grand Forks AFB, ND	ND Department of Emergency Services		Adjutant General	Sprynczynatyk	David	Bismarck	ND	1		
Grand Forks AFB, ND	ND House of Representatives District 17		Representative	Owens	Mark S.	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 17		Representative	Sanford	Mark	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 18		Representative	Glasheim	Eliot	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 18		Representative	Strinden	Marie	Grand Forks	ND	1	1	
Grand Forks AFB, ND	North Dakota Aerial Agricultural Association		Executive Director	Schreiber-Beck	Cindy	Wahpeton	ND	1	1	
Grand Forks AFB, ND	North Dakota Aviation Council		Chairman	Pittman	Darrel	Bismarck	ND	1	1	
Grand Forks AFB, ND	North Dakota Aviation Mechanics Association		President	Brekken	Rod	Casselton	ND	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**GRAND FORKS AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Governor's Office		Governor	Dalrymple	Jack	Bismarck	ND	1	1	
Grand Forks AFB, ND	North Dakota Sports Aviation Association		Chairman	Teets	Trent	West Fargo	ND	1	1	
Grand Forks AFB, ND	North Dakota State Senate District 17		Senator	Holmberg	Ray	Grand Forks	ND	1	1	
Grand Forks AFB, ND	North Dakota State Senate District 18		Senator	Triplett	Constance	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Polk County Board of County Commissioners		Commissioners			Crookston	MN	1	1	
Grand Forks AFB, ND	Small Business Administration			Giltner	Eric	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Army Corps of Engineers		North Dakota Regulatory Program Manager	Cimarosti	Dan	Bismarck	ND			1
Grand Forks AFB, ND	U.S. House of Representatives North Dakota		Congressman	Cramer	Kevin	Washington	DC	1	1	
Grand Forks AFB, ND	U.S. House of Representatives North Dakota		Congressman	Cramer	Kevin	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Heitkamp	Heidi	Washington	DC	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Heitkamp	Heidi	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Hoeven	John	Washington	DC	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Hoeven	John	Grand Forks	ND	1	1	
Grand Forks AFB, ND	University of North Dakota			Concannon	Bob	GFAFB	ND	1	1	
Grand Forks AFB, ND	University of North Dakota			Palmer	Al	Grand Forks	ND			1

## A.7.1.5 Draft EIS Mailing List (Continued)

## MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	Central Library					Wichita	KS			1
McConnell AFB, KS	FAA, Central Region		Regional Administrator	Miniace	Joe	Kansas City	MO			1
McConnell AFB, KS	Iowa Tribe of Kansas and Nebraska		Chairman	Rhodd	Timothy	White Cloud	KS			1
McConnell AFB, KS	Iowa Tribe of Kansas and Nebraska	THPO		Fee	F. Martin	White Cloud	KS			1
McConnell AFB, KS	Kansas Department of Health and Environment		Director, Division of Environment	Mitchell	John	Topeka	KS			1
McConnell AFB, KS	Kansas Department of Transportation		Secretary of Transportation	King	Mike	Topeka	KS			1
McConnell AFB, KS	McConnell AFB Library					McConnell AFB	KS			1
McConnell AFB, KS	National Institute for Aviation Research			Schwasinger	Richard	Wichita	KS			1
McConnell AFB, KS	Roberts & Roberts Properties			Roberts	John	Goddard	KS			1
McConnell AFB, KS	Sac & Fox Nation of Missouri in Kansas and Nebraska		Chairperson	Barton	Twen	Reserve	KS			1
McConnell AFB, KS	Sac & Fox Nation of Missouri in Kansas and Nebraska	THPO	Council Secretary	Green	Edmore	Reserve	KS			1
McConnell AFB, KS	State Historic Preservation Office		Executive Director	Chinn	Jennie	Topeka	KS			1
McConnell AFB, KS	State Representative, District #81			Howell	Jim	Derby	KS			1
McConnell AFB, KS	Topeka & Shawnee County Public Library					Topeka	KS			1
McConnell AFB, KS	U.S. Forest Service, Rocky Mountain Region					Golden	CO			1

## A.7.1.5 Draft EIS Mailing List (Continued)

## MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	USEPA Region VII		Environmental Review Coordinator	Cothorn	Joe	Kansas City	KS			1
McConnell AFB, KS	USFWS Kansas Dept. of Wildlife, Parks & Tourism					Pratt	KS			1
McConnell AFB, KS	USFWS, Office of the Director		Regional Director	Walsh	Noreen	Lakewood	CO			1
McConnell AFB, KS	Wichita Independent Business Association			Joachims	Suellen	Andover	KS			1
McConnell AFB, KS				Alford	Robert	Wichita	KS			1
McConnell AFB, KS				Heiman	Tom	Bel Air	KS			1
McConnell AFB, KS				Hitchcock	David	Wichita	KS			1
McConnell AFB, KS				LaFarelle Hunt	Margarita	Wichita	KS			1
McConnell AFB, KS				Pottorff	Joann	Wichita	KS			1
McConnell AFB, KS				Shifflett	Dana	Newton	KS			1
McConnell AFB, KS				Wolf	Ronad L	Haysville	KS			1
McConnell AFB, KS	Beechcraft			Houk	Jeffery	Derby	KS	1		
McConnell AFB, KS	Best Value Services			Tafesse	Solomon	Wichita	KS	1		
McConnell AFB, KS	Botanica		Executive Director	Miller	Marty	Wichita	KS	1		
McConnell AFB, KS	City of Derby		City Engineer	Squires	Dan	Derby	KS	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	City of Derby Economic Development		Director	Moeding	Allison	Derby	KS	1	1	
McConnell AFB, KS	City of Derby Mayor's Office		Mayor	Avello	Dion	Derby	KS	1	1	
McConnell AFB, KS	City of Derby Planning Department		City Planner	Bird	Cody	Derby	KS	1	1	
McConnell AFB, KS	City of Topeka Mayor's Office		Mayor	Bunten	William	Topeka	KS	1	1	
McConnell AFB, KS	City of Topeka Planning Department		Director	Fiander	Bill	Topeka	KS	1	1	
McConnell AFB, KS	City of Wichita Mayor's Office		Mayor	Brewer	Carl	Wichita	KS	1	1	
McConnell AFB, KS	City of Wichita Office of Environmental Health		Interim Environmental Health Manager	Maloney	Shawn	Wichita	KS	1	1	
McConnell AFB, KS	Derby City Council			Downing	Darrell	Derby	KS	1	1	
McConnell AFB, KS	Derby City Council			Warren	Chuck	Derby	KS	1	1	
McConnell AFB, KS	Friends University			Honts	Arlen	Wichita	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 103		Representative	Victors	Ponka-We	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 47		Representative	Gonzalez	Ramon	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 53		Representative	Tietze	Annie	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 56		Representative	Weigel	Virgil	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 57		Representative	Alcala	John	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 58		Representative	Lane	Harold	Topeka	KS	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

**MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	House Representatives Kansas District 84		Representative	Finney	Gail	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 86		Representative	Ward	Jim	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 92		Representative	Dillmore	Nile	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 95		Representative	Sawyer	Tom	Topeka	KS	1	1	
McConnell AFB, KS	Kansas Economic Progress Council			Koch	Bernie	Topeka	KS			
McConnell AFB, KS	Kansas Governor's Office		Governor	Brownback	Sam	Topeka	KS	1	1	
McConnell AFB, KS	Metropolitan Topeka Airport Authority					Topeka	KS	1	1	
McConnell AFB, KS	Sedgewick County		County Clerk	Arnold	Kelly	Wichita	KS	1	1	
McConnell AFB, KS	Sedgwick County Community Development			Zukovich	Kristi	Wichita	KS	1	1	
McConnell AFB, KS	Sedgwick County Manager's Office			Buchanan	Bill	Wichita	KS	1	1	
McConnell AFB, KS	Shawnee County		County Clerk	Beck	Cyndi	Topeka	KS	1	1	
McConnell AFB, KS	Shawnee County Planning Department					Topeka	KS	1	1	
McConnell AFB, KS	Spirit			Holup	Joan	Wichita	KS	1		
McConnell AFB, KS	State Senate - Kansas District 16		Senator	Masterson	Ty	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 18		Senator	Kelly	Laura	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 20		Senator	Schmidt	Vicki	Topeka	KS	1	1	

## A.7.1.5 Draft EIS Mailing List (Continued)

## MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	State Senate - Kansas District 25		Senator	O'Donnell	Michael	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 26		Senator	Kerschen	Dan	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 27		Senator	Donovan	Les	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 28		Senator	Peterson	Mike	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 29		Senator	Faust-Goudeau	Oletha	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 30		Senator	Wagle	Susan	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 31		Senator	McGinn	Carolyn	Topeka	KS	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congressman	Pompeo	Mike	Washington	DC	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congressman	Pompeo	Mike	Wichita	KS	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congresswoman	Jenkins	Lynn	Washington	DC	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congresswoman	Jenkins	Lynn	Topeka	KS	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Moran	Jerry	Wichita	KS	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Moran	Jerry	Washington	DC	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Roberts	Pat	Wichita	KS	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Roberts	Pat	Washington	DC	1	1	
McConnell AFB, KS	Wichita Airport Authority		Director of Airports	White	Victor D.	Wichita	KS	1	1	

*A.7.1.5 Draft EIS Mailing List (Continued)*

**MCCONNELL AIR FORCE BASE KC-46A FTU AND MOB 1 BEDDOWN DRAFT EIS MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	DRAFT EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	Wichita Art Museum		Chief Financial Officer	Harper	Jan	Wichita	KS	1		
McConnell AFB, KS	Wichita Sedgwick County		Director of Planning	Schlegel	John	Wichita	KS	1	1	
McConnell AFB, KS	Wichita-Sedgwick County Planning Department					Wichita	KS	1	1	
McConnell AFB, KS				Dahl	Dave	Wichita	KS	1		
McConnell AFB, KS				Foster	Judy	Wichita	KS	1		
McConnell AFB, KS				Foster	Tom	Wichita	KS	1		
McConnell AFB, KS				Mackey	Alan	Wichita	KS	1		
McConnell AFB, KS	Kansas Department of Wildlife, Parks, and Tourism		Ecological Services Section			Wichita	KS			1

### A.7.1.6 Postcard Mailing List

Postcard Mailing List

*Note: Addresses have been removed to protect privacy.*

Donna Prengiss Director  
Apache Tribe of Oklahoma  
Andarko, OK 73005

Rosemary Berens  
Bois Forte Band of Chippewa Indians  
Nett Lake, MN 55772

Kevin Leecy Chairman  
Bois Forte Band of Chippewa Indians  
Nett Lake, MN 55772

Robert Cast  
Caddo Nation of Oklahoma  
Binger, OK 73009

Brenda Edwards Chairperson  
Caddo Nation of Oklahoma  
Binger, OK 73009

Bill John Baker Principal Chief  
Cherokee Nation of Oklahoma  
Tahlequah, OK 74464

Pat Gwin Historic Preservation Officer  
Cherokee Nation of Oklahoma  
Tahlequah, OK 74465

Janice Boswell Governor  
Cheyenne and Arapaho Tribes  
Concho, OK 73022

Lynette Gray  
Cheyenne and Arapaho Tribes  
Concho, OK 73022

Kevin Keckler Chairman  
Cheyenne River Sioux Tribe  
Eagle Butte, SD 57625

Steve Vance  
Cheyenne River Sioux Tribe  
Eagle Butte, SD 57625

Bill Anoatubby Governor  
Chickasaw Nation  
Ada, OK 74280

Chief Allen Chairman  
Coeur d'Alene Tribe  
Plummer, ID 83851

Jill Wagner  
Coeur d'Alene Tribe  
Plummer, ID 83851

Jimmy Arterberry  
Comanche Nation of Oklahoma  
Lawton, OK 73502

Wallace Coffey Chairman  
Comanche Nation of Oklahoma  
Lawton, OK 73502

Michael Finley Business Council Chairman  
Confederated Tribes of the Colville  
Reservation  
Nespelem, WA 99155-0150

Guy Moura Acting THPO  
Confederated Tribes of the Colville  
Reservation  
Nespelem, WA 99155-0150

Brandon Sazue, Sr. Chairman  
Crow Creek Sioux Tribe  
Fort Thompson, SD 57339

Wanda Wells  
Crow Creek Sioux Tribe  
Fort Thompson, SD 57339

Anthony Reider President  
Flandreau Santee Sioux  
Flandreau, SD 57028

James B. "JB" Weston  
Flandreau Santee Sioux  
Flandreau, SD 57028

LeRoy Defoe  
Fond du Lac Band of Lake Superior  
Chippewa  
Cloquet, MN 55720

Karen R. Diver Chairwoman  
Fond du Lac Band of Lake Superior  
Chippewa  
Cloquet, MN 55720

Norman W. Deschampe Chairman  
Grand Portage Band of Lake Superior  
Chippewa  
Grand Portage, MN 55605

Mary Ann Gagnon  
Grand Portage Band of Lake Superior  
Chippewa  
Grand Portage, MN 55605

F. Martin Fee  
Iowa Tribe of Kansas and Nebraska  
White Cloud, KS 66094

Timothy Rhodd Chairman  
Iowa Tribe of Kansas and Nebraska  
White Cloud, KS 66094

### *A.7.1.6 Postcard Mailing List (Continued)*

Glen Nenema Chairman Kalispell Indian Community Usk, MN 99180-0039	Crystal Douglas Kaw Nation of Oklahoma Kaw City, OK 74641	Guy Munroe Chairman & CEO Kaw Nation of Oklahoma Kaw City, OK 74641
Juanita Ahtone Kiowa Tribe of Oklahoma Andarko, OK 73005	Amie Tah-Bone Museum Director & Acting NAGPRA Representative Kiowa Tribe of Oklahoma Carnegie, OK 73015	Ronald "Dawes" Twohatchet Chairman Kiowa Tribe of Oklahoma Carnegie, OK 73015
Carri Jones Chairwoman Leech Lake Band of Ojibwe Cas Lake, MN 56633	Gina Lemon Leech Lake Band of Ojibwe Cas Lake, MN 56633	Clair Green Lower Brule Sioux Tribe Lower Brule, SD 57548-0187
Michael Jandreque Chairman Lower Brule Sioux Tribe Lower Brule, SD 57548-0187	Anthony Morse Lower Sioux Indian Community Morton, MN 56270	Denny Prescott Tribal President Lower Sioux Indian Community Morton, MN 56270
Elgin Crowsbreast Mandan, Hidatsa & Arikara Nation New Town, ND 58763	Tex G. Hall Chairman Mandan, Hidatsa & Arikara Nation New Town, ND 58763	Benjamin Melanie Chief Executive Mille Lacs Band of Ojibwe Onamia, MN 56359
Natalie Weyaus Mille Lacs Band of Ojibwe Onamia, MN 56359	Bryan Brewer President Oglala Sioux Tribe Pine Ridge, SD 57770-2070	Wilmer Mesteth Oglala Sioux Tribe Pine Ridge, SD 57770
James Munkres Osage Nation Pawhuska, OK 74056	John D. Red Eagle Principal Chief Osage Nation Pawhuska, OK 74056	Audrey Kohnen Tribal Chairperson Prairie Island Indian Community Welch, MN 55089
Floyd Jourdain Chairman Red Lake Band of Chippewa Red Lake, MN 56671	Russell Eagle Bear Rosebud Sioux Tribe of Indians Rosebud, SD 57570	Cyril Scott President Rosebud Sioux Tribe of Indians Rosebud, SD 57570
Twen Barton Chairperson Sac & Fox Nation of Missouri in Kansas and Nebraska Reserve, KS 66434	Edmore Green Council Secretary Sac & Fox Nation of Missouri in Kansas and Nebraska Reserve, KS 66434	Charlie Vig Chairman Shakopee Mdewakanton Sioux Community Prior Lake, MN 55372
Leonard Wabasha Shakopee Mdewakanton Sioux Community Prior Lake, MN 55372	Dianne Desrosiers Sisseton-Wahpeton Oyate Sisseton, SD 57262	Robert Shepherd Chairman Sisseton-Wahpeton Oyate Agency Village, SD 57262-0509

### *A.7.1.6 Postcard Mailing List (Continued)*

Roger Yankton Chairperson  
Spirit Lake Tribe  
Fort Totten, ND 58335

Randy Abrahamson  
Spokane Tribe of Indians  
Wellpinit, WA 99040

Rudy Peone Chairman  
Spokane Tribe of Indians  
Wellpinit, WA 99040

Charles Murphy Chairman  
Standing Rock Sioux Tribe  
Fort Yates, ND 58538

Waste'Win Young  
Standing Rock Sioux Tribe  
Fort Yates, ND 58538

Kade Ferris  
Turtle Mountain Band of Chippewa  
Belcourt, ND 58316

Merle St. Clair Chairman  
Turtle Mountain Band of Chippewa  
Belcourt, ND 58316

Kevin Jensvold Chairman  
Upper Sioux Indian Community  
Granite Falls, MN 56241

Marlow LaBatte  
Upper Sioux Indian Community  
Granite Falls, MN 56241

Renee Lampi  
White Earth Band of Minnesota  
Chippewa  
White Earth, MN 56591

Erma Vizenor Chairwoman  
White Earth Band of Minnesota  
Chippewa  
White Earth, MN 56591

Terri Parton President  
Wichita and Affiliated Tribes of  
Oklahoma  
Anadarko, OK 73005

Thurman Cournoyer Chairman  
Yankton Sioux Tribe  
Wagner, SD 57380

Lana M. Gravatt THPO  
Yankton Sioux Tribe  
Wagner, SD 57380

Raul R. Labrador Congressman  
U.S. House of Representatives  
Coeur d'Alene, ID 83814

Raul R. Labrador Congressman  
U.S. House of Representatives  
Washington, DC 20515

Frank D. Lucas Congressman  
U.S. House of Representatives  
Washington, DC 20515

Frank D. Lucas Congressman  
U.S. House of Representatives  
Yukon, OK 73099

Kenny Marchant Congressman  
U.S. House of Representatives  
Irving, TX 75063

Kenny Marchant Congressman  
U.S. House of Representatives  
Washington, DC 20515

Cathy McMorris Rodgers  
Congresswoman  
U.S. House of Representatives  
Spokane, WA 99201

Cathy McMorris Rodgers  
Congresswoman  
U.S. House of Representatives  
Washington, DC 20515

Randy Neugebauer Congressman  
U.S. House of Representatives  
Lubbock, TX 79401

Randy Neugebauer Congressman  
U.S. House of Representatives  
Washington, DC 20515

Mike Pompeo Congressman  
U.S. House of Representatives  
Washington, DC 20515

Mike Pompeo Congressman  
U.S. House of Representatives  
Wichita, KS 67207

Mac Thornberry Congressman  
U.S. House of Representatives  
Amarillo, TX 79101

Mac Thornberry Congressman  
U.S. House of Representatives  
Washington, DC 20515

Lynn Jenkins Congresswoman  
U.S. House of Representatives  
Topeka, KS 66606

Kevin Cramer Congressman  
U.S. House of Representatives North  
Dakota  
Grand Forks, ND 58202

*A.7.1.6 Postcard Mailing List (Continued)*

Lynn Jenkins Congresswoman  
U.S. House of Representatives, Kansas  
Washington, DC 20515

Kevin Cramer Congressman  
U.S. House of Representatives, North  
Dakota  
Washington, DC 20515

Jerry Moran Senator  
U.S. Senate Kansas  
Washington, DC 20510

Jerry Moran Senator  
U.S. Senate Kansas  
Wichita, KS 67226

Pat Roberts Senator  
U.S. Senate Kansas  
Washington, DC 20510

Pat Roberts Senator  
U.S. Senate Kansas  
Wichita, KS 67202

Heidi Heitkamp Senator  
U.S. Senate North Dakota  
Grand Forks, ND 58201

Heidi Heitkamp Senator  
U.S. Senate North Dakota  
Washington, DC 20510

John Hoeven Senator  
U.S. Senate North Dakota  
Grand Forks, ND 58201

John Hoeven Senator  
U.S. Senate North Dakota  
Washington, DC 20510

Tom Coburn Senator  
U.S. Senate Oklahoma  
Oklahoma City, OK 73102

James M. Inhofe Senator  
U.S. Senate Oklahoma  
Enid, OK 73701

Mike Crapo Senator  
U.S. Senate, Idaho  
Coeur d'Alene, ID 83814

Mike Crapo Senator  
U.S. Senate, Idaho  
Washington, DC 20510

James E. Risch Senator  
U.S. Senate, Idaho  
Coeur d'Alene, ID 83814

James E. Risch Senator  
U.S. Senate, Idaho  
Washington, DC 20510

Tom Coburn Senator  
U.S. Senate, Oklahoma  
Washington, DC 20510

James M. Inhofe Senator  
U.S. Senate, Oklahoma  
Washington, DC 20510

John Cornyn Senator  
U.S. Senate, Texas  
Lubbock, TX 79401

John Cornyn Senator  
U.S. Senate, Texas  
Washington, DC 20510

Ted Cruz Senator  
U.S. Senate, Texas  
Dallas, TX 75219

Ted Cruz Senator  
U.S. Senate, Texas  
Washington, DC 20510

Maria Cantwell Senator  
U.S. Senate, Washington  
Spokane, WA 99201

Maria Cantwell Senator  
U.S. Senate, Washington  
Washington, DC 20510

Patty Murray Senator  
U.S. Senate, Washington  
Spokane, WA 99201

Patty Murray Senator  
U.S. Senate, Washington  
Washington, DC 20510

Larry Crouse Representative  
House of Representatives  
Olympia, WA 98504-0600

Jeff Holy Representative  
House of Representatives  
Olympia, WA 98504-0600

Timm Ormsby Representative  
House of Representatives  
Olympia, WA 98504-0600

Charles L. Ortega Representative  
House of Representatives  
Altus, OK 73521

### *A.7.1.6 Postcard Mailing List (Continued)*

Charles L. Ortega Representative  
House of Representatives  
Oklahoma City, OK 73105

Kevin Parker Representative  
House of Representatives  
Olympia, WA 98504-0600

Marcus Riccelli Representative  
House of Representatives  
Olympia, WA 98504-0600

Todd Russ Representative  
House of Representatives  
Cordell, OK 73632

Todd Russ Representative  
House of Representatives  
Oklahoma City, OK 73105

Matt Shea Representative  
House of Representatives  
Olympia, WA 98504-0600

G. Harold Wright Jr. Representative  
House of Representatives  
Oklahoma City, OK 73105

G. Harold Wright Jr. Representative  
House of Representatives  
Weatherford, OK 73096

Ponka-We Victors Representative  
House Representatives Kansas District  
103  
Topeka, KS 66612

Ramon Gonzalez Representative  
House Representatives Kansas District  
47  
Topeka, KS 66612

Annie Tietze Representative  
House Representatives Kansas District  
53  
Topeka, KS 66612

Virgil Weigel Representative  
House Representatives Kansas District  
56  
Topeka, KS 66612

John Alcalá Representative  
House Representatives Kansas District  
57  
Topeka, KS 66612

Harold Lane Representative  
House Representatives Kansas District  
58  
Topeka, KS 66612

Gail Finney Representative  
House Representatives Kansas District  
84  
Topeka, KS 66612

Jim Ward Representative  
House Representatives Kansas District  
86  
Topeka, KS 66612

Nile Dillmore Representative  
House Representatives Kansas District  
92  
Topeka, KS 66612

Tom Sawyer Representative  
House Representatives Kansas District  
95  
Topeka, KS 66612

C.L. "Butch" Otter Governor  
Idaho Governor's Office  
Boise, ID 83720

Sam Brownback Governor  
Kansas Governor's Office  
Topeka, KS 66603-3434

Mark S. Owens Representative  
ND House of Representatives District  
17  
Grand Forks, ND 58201-2820

Mark Sanford Representative  
ND House of Representatives District  
17  
Grand Forks, ND 58201-2904

Eliot Glasheim Representative  
ND House of Representatives District  
18  
Grand Forks, ND 58203-3203

Marie Strinden Representative  
ND House of Representatives District  
18  
Grand Forks, ND 58201-4765

Jack Dalrymple Governor  
North Dakota Governor's Office  
Bismarck, ND 58505-0001

Ray Holmberg Senator  
North Dakota State Senate District 17  
Grand Forks, ND 58201-7717

Constance Triplett Senator  
North Dakota State Senate District 18  
Grand Forks, ND 58206-5178

Mary Fallin Governor  
Oklahoma Governor's Office  
Oklahoma City, OK 73105

Jim Howell  
State Representative, District #81  
Derby, KS 67037

Ty Masterson Senator  
State Senate - Kansas District 16  
Topeka, KS 66612

*A.7.1.6 Postcard Mailing List (Continued)*

Laura Kelly Senator  
State Senate - Kansas District 18  
Topeka, KS 66612

Anthony Hensley Senator  
State Senate - Kansas District 19  
Topeka, KS 66612

Vicki Schmidt Senator  
State Senate - Kansas District 20  
Topeka, KS 66612

Michael O'Donnell Senator  
State Senate - Kansas District 25  
Topeka, KS 66612

Dan Kerschen Senator  
State Senate - Kansas District 26  
Topeka, KS 66612

Les Donovan Senator  
State Senate - Kansas District 27  
Topeka, KS 66612

Mike Peterson Senator  
State Senate - Kansas District 28  
Topeka, KS 66612

Oletha Faust-Goudeau Senator  
State Senate - Kansas District 29  
Topeka, KS 66612

Susan Wagle Senator  
State Senate - Kansas District 30  
Topeka, KS 66612

Carolyn McGinn Senator  
State Senate - Kansas District 31  
Topeka, KS 66612

Tom Ivester Senator  
State Senate - Oklahoma District 026  
Elk City, OK 73648

Tom Ivester Senator  
State Senate - Oklahoma District 026  
Oklahoma City, OK 73105

Mike Schulz Senator  
State Senate - Oklahoma District 038  
Altus, OK 73521

Mike Schulz Senator  
State Senate - Oklahoma District 038  
Oklahoma City, OK 73105

Wendy Davis Senator  
State Senate, Texas District 10  
Fort Worth, TX 76107

Robert L Duncan Senator  
State Senate, Texas District 28  
Lubbock, TX 79401

Kel Seliger Senator  
State Senate, Texas District 31  
Amarillo, TX 79105

Kelly Hancock Senator  
State Senate, Texas District 9  
Austin, TX 78711

John M. Frullo Representative  
State, House of Representatives  
Lubbock, TX 79414

Charles Perry Representative  
State, House of Representatives  
Lubbock, TX 79424

Four Price Representative  
State, House of Representatives  
Amarillo, TX 79101

Jonathan Strickland Representative  
State, House of Representatives  
Austin, TX 78768

Rick Perry Governor  
Texas Governor's Office  
Austin, TX 78711

Jay Inslee Governor  
Washington Governor's Office  
Olympia, WA 98504-0002

Andy Billig Senator  
Washington State Senate, District 3  
Olympia, WA 98504-0403

Mike Padden Senator  
Washington State Senate, District 4  
Olympia, WA 98504-0404

Michael Baumgartner Senator  
Washington State Senate, District 6  
Olympia, WA 98504-0406

Catherine Coke  
Altus City Attorney  
Altus, OK 73521

Councilmembers  
Altus City Council  
Altus, OK 73522

Commissioners  
Cavalier County Commission  
Langdon, ND 58249

*A.7.1.6 Postcard Mailing List (Continued)*

Elizabeth Gray Administrator  
City of Altus  
Altus, OK 73521

Councilmembers  
City of Altus City Council  
Altus, OK 73521

David Webb Mayor  
City of Altus Mayor's Office  
Altus, OK 73521

Paul Harpole Mayor  
City of Amarillo Mayor's Office  
Amarillo, TX 79101

Dion Avello Mayor  
City of Derby Mayor's Office  
Derby, KS 67037-3533

Lynn Stauss Mayor  
City of East Grand Forks Mayor's Office  
East Grand Forks, MN 56721

Cheryl Snipes City Clerk  
City of Elk City  
Elk City, OK 73648

Daniel Gambill Mayor  
City of Elk City Mayor's Office  
Elk City, OK 73644

Betsy Price Mayor  
City of Fort Worth Mayor's Office  
Fort Worth, TX 76102

Michael Brown Mayor  
City of Grand Forks  
Grand Forks, ND 58206-5200

Curt Kreun  
City of Grand Forks  
Grand Forks, ND 58201

Glen Robertson Mayor  
City of Lubbock Mayor's Office  
Lubbock, TX 79457

David Condon Mayor  
City of Spokane Mayor's Office  
Spokane, WA 99201

Larry Wolgast Mayor  
City of Topeka Mayor's Office  
Topeka, KS 66603

Carl Brewer Mayor  
City of Wichita Mayor's Office  
Wichita, KS 67202

Lisa Anders City Clerk  
Clinton City  
Clinton, OK 73601

Darrell Downing  
Derby City Council  
Derby, KS 67037

Chuck Warren  
Derby City Council  
Derby, KS 67037

Hal Gershman Council Member  
Grand Forks City Council  
Grand Forks, ND 58203

Commissioner  
Grand Forks Commissioners  
Grand Forks, ND 58201-4715

Vivian Drees Clerk/Treasurer  
Grand Forks County  
Grand Forks, ND 58201

Constance Triplett Commission Chair  
Grand Forks County Board of  
Commissioners  
Grand Forks, ND 58206-6372

Gary Malm Commission Chairman  
Grand Forks County Commissioners  
Grand Forks, ND 58201

Kelly Pinion  
Lubbock County Clerk's Office  
Lubbock, TX 79401

Commissioners  
Polk County Board of County  
Commissioners  
Crookston, MN 56716

Julie Smith  
Potter County Clerk's Office  
Amarillo, TX 79105

Kelly Arnold County Clerk  
Sedgewick County  
Wichita, KS 67203

Cyndi Beck County Clerk  
Shawnee County  
Topeka, KS 66603

County Clerk  
Spokane County  
Spokane, WA 99260

Mary Louise Garcia  
Tarrant County Clerk's Office  
Fort Worth, TX 76196

### *A.7.1.6 Postcard Mailing List (Continued)*

Diane Blair Base Realignment Impact Center Grand Forks, ND 58201	Horst Greczmiel Council on Environmental Quality Washington, DC 20501	John H. Page, Jr. FAA, Air Traffic Organization Washington, DC 20591
Joe Miniace Regional Administrator FAA, Central Region Kansas City, MO 64106-2641	Barry Cooper Regional Administrator FAA, Great Lakes Region Des Plaines, IL 60018	Steve Obenauer FAA, Great Lakes Region Bismarck, ND 58504
Michael D. Huerta Administrator FAA, Headquarters Washington, DC 20591	Kelly Nelson FAA, Minneapolis Air Route Traffic Control Center Minneapolis, MN 55450-2704	Kathryn Vernon Regional Administrator FAA, Northwest Mountain Renton, WA 98057
Teresa Bruner Administrator FAA, Southwest Region Fort Worth, TX 76137	Roger McGrath FAA, Southwest Region Fort Worth, TX 76137	David Cink Federal Aviation Administration Great Lakes Region Grand Forks, ND 58203
National Park Service Denver, CO 80225	Don Kilma U.S. Advisory Council on Historic Preservation Washington, DC 20004	Dan Cimarosti North Dakota Regulatory Program Manager U.S. Army Corps of Engineers Bismarck, ND 58504
U.S. Army Corps of Engineers Tulsa, OK 74128-4609	U.S. Bureau of Land Management Tulsa, OK 74145-1352	Dennis E. Breitzman Area Manager U.S. Bureau of Reclamation Bismarck, ND 58501
Robert W. Johnson Commissioner U.S. Bureau of Reclamation Washington, DC 20240-0001	Michael J. Ryan Regional Director U.S. Bureau of Reclamation Billings, MT 59107-6900	Benjamin Tuggle U.S. Fish and Wildlife Service, Southwest Region Albuquerque, NM 87103-1306
Laura Jo West Supervisor U.S. Forest Service, Colville National Forest Colville, WA 99114	Jose Linares Director U.S. Forest Service, Region 6, Pacific Northwest Portland, OR 97204-3440	U.S. Forest Service, Rocky Mountain Region Golden, CO 80401
Christopher Laveau Supervisory Hydrologist U.S. Geological Survey Grand Forks, ND 58203	Suzette Kimball Acting Director U.S. Geological Survey National Center Reston, VA 20192	Deputy Regional Director USBIA, Great Plains Regional Office Aberdeen, SD 57401-4384
Robert Impson Muskogee Area Director USBIA, Muskogee Area Office Muskogee, OK 74401	Dan Deerinwater Regional Director USBIA, Southern Plains Regional Office Anadarko, OK 73005	USDA Natural Resources Conservation Service Altus, OK 73521-1305

### *A.7.1.6 Postcard Mailing List (Continued)*

Gary O'Neill State Conservationist USDA, Natural Resources Conservation Service Stillwater, OK 74075-2655	Gina McCarthy Administrator USEPA Washington, DC 20004	Dennis E. McLerran Regional Administrator USEPA Region 10 Seattle, WA 98101
Carol Rushin Acting Regional Administrator USEPA Region 10 Denver, CO 80202-1129	Joe Cothorn Environmental Review Coordinator USEPA Region 7 Lenexa, KS 66219	Dana Allen USEPA Region 8 Denver, CO 80202-1129
James Hanley USEPA Region 9 Denver, CO 80202-1129	Susan Bromm Director USEPA, Office of Federal Activities Washington, DC 20004	USEPA, Oklahoma Field Office Tulsa, OK 74128-4629
USEPA, Region 6 Dallas, TX 75202-2733	Michael Ramirez USFWS Devils Lake, ND 58301	Shawn Bayless Pilot USFWS Bismarck, ND 58501
Jim Alfonso Deputy Project Leader USFWS Devils Lake Devils Lake, ND 58301	Noreen Walsh Regional Director USFWS Mountain-Prairie Region Lakewood, CO 80228	Jeff Towner Mr. USFWS North Dakota Field Office Bismarck, ND 58501-7926
Robyn Thorson Regional Director USFWS Pacific Region Portland, OR 97232	NEPA Program Coordinator USFWS Upper Columbia Office Spokane Valley, WA 99206	Noreen Walsh Regional Director USFWS, Office of the Director Lakewood, CO 80228
USFWS, Oklahoma Ecological Services Field Office Tulsa, OK 74129-1428	Lou Lombardi Veterans Service Office Grand Forks, ND 58206	Allyson Brooks State Historic Preservation Officer Department of Archaeology & Historic Preservation Olympia, WA 98501
Dave Duncan Water Quality Department of Ecology Washington State Spokane, WA 99205-1295	Lynn Peterson Secretary of Transportation Department of Transportation Washington Olympia, WA 98504	Jennifer Meeks Great Plains State Park Mountain Park, OK 73559
Roy Fillion Job Service North Dakota Grand Forks, ND 58201	John Mitchell Director, Division of Environment Kansas Department of Health and Environment Topeka, KS 66612-1367	Mike King Secretary of Transportation Kansas Department of Transportation Topeka, KS 66603-3754
Ecological Services Section Kansas Department of Wildlife, Parks, and Tourism Pratt, KS 67124-8174	J R Flores State Conservationist Natural Resources Conservation Service Bismarck, ND 58501	Jason Weller Acting Chief Natural Resources Conservation Service Washington, DC 20250

### *A.7.1.6 Postcard Mailing List (Continued)*

W. Swenson District Engineer NDDOT District 3 - Devils Lake Devils Lake, ND 58301-3628	L. Noehre District Engineer NDDOT District 6 - Grand Forks Grand Forks, ND 58208-3077	Deborah A. Painte Executive Director North Dakota Commission on Indian Affairs Bismarck, ND 58505-0300
Doug Goehring Commissioner North Dakota Department of Agriculture Bismarck, ND 58505-0020	North Dakota Department of Commerce Bismarck, ND 58502-2057	Terry Dwelle North Dakota Department of Health Bismarck, ND 58505-0200
Grant Levi Director North Dakota Department of Transportation Bismarck, ND 58505-0700	Paul Govig Director North Dakota Division of Community Services Bismarck, ND 58503	Jeff Rotenberger Energy and Information Security Program Manager North Dakota Energy Department Bismarck, ND 58502-2057
Larry Kotchman State Forester North Dakota Forest Service Bottineu, ND 58318	Jeff Faught Pilot North Dakota Game and Fish Bismarck, ND 58504	Terry Steinwand Director Game and Fish Department Bismarck, ND 58505-0001
Mark Zimmerman Director North Dakota Parks and Recreation Department Bismarck, ND 58503-0649	Chuck Randall North Dakota Small Business Development Center Grand Forks, ND 58203-8372	Larry Knudtson Research Analyst North Dakota State Water Commission Bismarck, ND 58505-0850
Oklahoma Department of Transportation Oklahoma City, OK 73105	Margaret Graham Oklahoma Dept. of Environmental Quality Oklahoma City, OK 73201	Gary Ridley Director Oklahoma Dept. of Transportation Oklahoma City, OK 73105
Agency Representative Oklahoma Dept. of Wildlife Conservation Oklahoma City, OK 73505	Oklahoma Dept. of Wildlife Conservation Oklahoma City, OK 73152	Agency Representative Oklahoma Natural Heritage Inventory Norman, OK 73019-0575
Oklahoma Tourism & Recreation Dept. Oklahoma City, OK 73102	Jennie Chinn Executive Director State Historic Preservation Office Topeka, KS 66615-1099	Melvina Heisch Deputy State Historic Preservation Officer State Historic Preservation Office Oklahoma City, OK 73015
Merlan Paaverud, Jr. State Historic Preservation Officer State Historical Society of North Dakota Bismarck, ND 58505-0830	Zak Covar Executive Director Texas Commission on Environmental Quality Austin, TX 78711-3087	Phil Wilson Executive Director Texas Department of Transportation Austin, TX 78701
Texas Historical Commission Austin, TX 78711-2276	Texas Parks and Wildlife Department Austin, TX 78744	USFWS Kansas Dept. of Wildlife, Parks & Tourism Pratt, KS 67124

### *A.7.1.6 Postcard Mailing List (Continued)*

Washington Air National Guard Fairchild AFB, WA 99011-9621	Washington Department of Transportation Olympia, WA 98504-7300	Phil Anderson Director Washington Dept. of Fish and Wildlife Olympia, WA 98501-1091
Mike Patterson Chief of Police Altus Police Department Altus, OK 73521	Albert Tripp City of Airway Heights Airway Heights, WA 99001	Derrick Braaten City Planner City of Airway Heights Planning Department Airway Heights, WA 99001
City of Airway Heights Planning Department Airway Heights, WA 99001	Barbara Burleson Planning Director City of Altus Planning and Development Altus, OK 73521	Kelley Shaw Planning Director City of Amarillo Planning Department Amarillo, TX 79105-1971
City of Clinton Planning Department Clinton, OK 73601	Dave Yadon Planning Director City of Coeur d'Alene Planning Commission Coeur d'Alene, ID 83814	Dan Squires City Engineer City of Derby Derby, KS 67037-3533
Kathy Sexton City Manager City of Derby City Manager's Office Derby, KS 67037-3533	Allison Moeding Director City of Derby Economic Development Derby, KS 67037-3533	Cody Bird City Planner City of Derby Planning Department Derby, KS 67037-3533
City of Elk City Elk City, OK 73644	Randall Harwood Director City of Fort Worth Planning and Development Fort Worth, TX 76102	Maureen Storstad City of Grand Forks Grand Forks, ND 58203
Brad Gengler City Planner City of Grand Forks Planning Department Grand Forks, ND 58203	City of Lubbock Lubbock, TX 79401	Kathleen Weinand City of Spokane Spokane, WA 99201
Scott Chesney Planning Director City of Spokane Planning and Development Spokane, WA 99201	Bill Fiander Director City of Topeka Planning Department Topeka, KS 66607	Shawn Maloney Interim Environmental Health Manager City of Wichita Office of Environmental Health Wichita, KS 67214
Lane Magnuson County Planner County of Grand Forks Planning & Zoning Grand Forks, ND 58201	Mark R. Fisher District Wildlife Biologist Devils Lake Wetland Management District Devils Lake, ND 58301	Kimberly Strom Grand Forks Chamber of Commerce Grand Forks, ND 58203
Barry Wilfahrt President & CEO Grand Forks Chamber of Commerce Grand Forks, ND 58203	Klausa Thiessen President Grand Forks Region Grand Forks, ND 58203	Kristi Zukovich Sedgwick County Community Development Wichita, KS 67203

*A.7.1.6 Postcard Mailing List (Continued)*

Bill Buchanan  
Sedgwick County Manager's Office  
Wichita, KS 67203

Shawnee County Planning Department  
Topeka, KS 66618

Eric Giltner  
Small Business Administration  
Grand Forks, ND 58203

Albert French  
Spokane County Commissioner  
Spokane, WA 99260

Spokane County Planning Department  
Spokane, WA 99260

Joe Southwell Air Quality Engineer  
Spokane Regional Clean Air Agency  
Spokane, WA 99207-5384

E. Susan Meyer  
Spokane Transit Authority  
Spokane, WA 99201-2686

John Schlegel Director of Planning  
Wichita Sedgwick County  
Wichita, KS 67202-1688

Wichita-Sedgwick County Planning  
Department  
Wichita, KS 67202

Robert Alford  
Wichita, KS 67220

Duaine Ash  
Devils Lake, ND 58301

Kevin Baker  
Altus, OK 73521

Christy Brantner  
Spokane, WA 99224

Paul Brusseau  
Walhalla, ND 58282

Dave Dahl  
Wichita, KS 67226

Tom & Judy Foster  
Wichita, KS 67207

Tom Heiman  
Bel Air, KS 67220

David Hitchcock  
Wichita, KS 67203

Christopher & Deanna Jones  
Altus, OK 73521

David Kragnes  
Felton, MN 56536

Margarita LaFarelle Hunt  
Wichita, KS 67209

Alan Mackey  
Wichita, KS 67230

Tom Moore  
Altus, OK 73521

Joann Pottorff  
Wichita, KS 67208

Randy Richards  
Grand Forks, ND 58201

T. Richards  
Grand Forks, ND 58201

Richard Sawdy  
Spokane, WA 99203

Dana Shifflett  
Newton, KS 67114-8793

Anna Spivey  
Langdon, ND 58249

Ronad L Wolf  
Haysville, KS 67060

*A.7.1.6 Postcard Mailing List (Continued)*

Keith Lund  
Grand Forks, ND 58203

Doris Cooper  
Grand Forks, ND 58203

Shelley Packard  
Wichita, KS 67207

Gwen Skjold  
Grand Forks, ND 58201

Jack Davidson  
Wichita, KS 67226

Henry Hartsell  
Altus, OK 73521-2020

Maurice Clark Gunther  
Wichita, KS 67216

Jeffery Houk  
Beechcraft  
Derby, KS 67037

Solomon Tafesse  
Best Value Services  
Wichita, KS 67202

Marty Miller Executive Director  
Botanica  
Wichita, KS 67203-3199

Paul Swavely  
Fairfiled Inn and Suites  
Spokane, WA 99202

Hollis Barnett  
Garco Construction  
Spokane, WA 99220

Skip Greenberg  
Greenberg Realty  
Grand Forks, ND 58201

Sandra Jawara  
GSI  
Spokane, WA 99201

Tom Reese  
Lydig Construction  
Spokane, WA 99206

Steve Breidenbach  
Nokak Electric Cooperative  
Grand Forks, ND 58208-3000

John Roberts  
Roberts & Roberts Properties  
Goddard, KS 67052

Joan Holup  
Spirit  
Wichita, KS 67207

James Murphey  
STRATA  
Spokane, WA 99206

Jan Harper Chief Financial Officer  
Wichita Art Museum  
Wichita, KS 67203-3296

Tim Murphy Mr.  
Altus Police Department  
Altus, OK 73521

Roger Levick Sherriff  
Jackson County Sheriff  
Altus, OK 73521

Johnny Freeman Mr.  
Oklahoma Highway Patrol in Altus  
Altus, OK 73521

Altus AFB Library  
Altus, OK 73523

Altus Public Library  
Altus, OK 73521

Amarillo Public Library  
Amarillo, TX 79101

Central Library  
Wichita, KS 67202

Fairchild AFB Library  
Fairchild AFB, WA 99011

Grand Forks AFB Library  
Grand Forks AFB, ND 58205

Grand Forks Public Library  
Grand Forks, ND 99201

*A.7.1.6 Postcard Mailing List (Continued)*

Lawton Public Library  
Lawton, OK 73501

Mahon Public Library  
Lubbock, TX 79401

McConnell AFB Library  
McConnell AFB, KS 67221

Spokane Public Library  
Spokane, WA 99201

Summarglen Library  
Fort Worth, TX 76137

Topeka & Shawnee County Public  
Library  
Topeka, KS 66605

Western Plains Library System  
Clinton, OK 76301

Mitch Meador  
Lawton Constitution  
Lawton, OK 73502

Mary Esparza  
KWHN/KQ106  
Altus, OK 73521

Duaine Sanden  
Leighton Broadcasting  
Mentor, MN 56736

Jantz Bain Board Member  
Chamber of Commerce  
Altus, OK 73521

Kerry Bull Board Member  
Chamber of Commerce  
Altus, OK 73521

Dana Darby Board Member  
Chamber of Commerce  
Altus, OK 73522

N. Lee Doughty Board Member  
Chamber of Commerce  
Altus, OK 73521

Jim Gover Board Member  
Chamber of Commerce  
Altus, OK 73521

Rodger Kerr Board Member  
Chamber of Commerce  
Altus, OK 73521

Anthony B. Krawietz Board Member  
Chamber of Commerce  
Altus AFB, OK 73523

Mary Kruska Board Member  
Chamber of Commerce  
Altus, OK 73521

Krystal Martin Board Member  
Chamber of Commerce  
Altus, OK 73521

Jim Norris Board Member  
Chamber of Commerce  
Altus, OK 73522

David Player Board Member  
Chamber of Commerce  
Altus, OK 73521

Brenda Pruitt Board Member  
Chamber of Commerce  
Altus, OK 73521

Danny Robbins Board Member  
Chamber of Commerce  
Altus, OK 73521

Shane Hokett Board Member  
Chamber of Commerce & Military  
Affairs Committee  
Blair, OK 73526

Joe Leverett Board Member  
Chamber of Commerce & Military  
Affairs Committee  
Altus, OK 73521

Eva Lucas Chairman  
Committee of 100  
Elmer, OK 73539

Greg Bever  
Forward Fairchild  
Spokane, WA 99223

Danny Holwerda Chairperson  
GF-EGF Chamber of Military  
Appreciation Committee  
Grand Forks, ND 58203

Robert Green  
Grand Forks American Legion # 6  
Arvilla, ND 58214

John Colter  
Grand Forks Board of Realtors  
Grand Forks, ND 58201

### *A.7.1.6 Postcard Mailing List (Continued)*

Matt McCoy International Triad Alliance Spokane, WA 99203	Bernie Koch Kansas Economic Progress Council Topeka, KS 66612	Pam Schorsch MAC Committee Grand Forks, ND 58201
Paul Krupp Neighborhood Alliance Spokane, WA 99203	Rob Higgins Spokane Association of Realtors Spokane, WA 99205-4206	Suellen Joachims Wichita Independent Business Association Andover, KS 67002
Alpine Aviation, Inc Provo, UT 84601	Altus/Quartz Mountain Regional Airport Altus, OK 73521	Ken Schuler Civil Air Patrol (CAP) Grand Forks, ND 58201
Clinton-Sherman Industrial Airpark/OSIDA Burns Flat, OK 73624	Christopher Ash Fort Worth Alliance Airport Fort Worth, TX 76102	Fort Worth Meacham International Airport Fort Worth, TX 76106
GFK Flight Support Grand Forks, ND 58203	Patrick Dame Executive Director Grand Forks Regional Airport Authority Grand Forks, ND 58203	Lubbock International Airport Lubbock, TX 79404
Metropolitan Topeka Airport Authority Topeka, KS 66619	National Air Transportation Assoc. Alexandria, VA 22302	National Association of State Aviation Officials Washington, DC 20001
Larry Taborsky Director National Association of State Aviation Officials Bismarck, ND 58502	National Business Aviation Association Washington, DC 20036	Cindy Schreiber-Beck Executive Director North Dakota Aerial Agricultural Association Wahpeton, ND 58075
Gary R. Ness Executive Director North Dakota Aeronautics Commission Bismarck, ND 58502-5020	North Dakota Army National Guard Bismarck, ND 58502	Robert Simmers Chairman North Dakota Aviation Association Bismarck, ND 58504
Darrel Pittman Chairman North Dakota Aviation Council Bismarck, ND 58503-6409	Rod Brekken President North Dakota Aviation Mechanics Association Casselton, ND 58012	Paul Hanson President North Dakota Pilots Association Emerado, ND 58228
Trent Teets Chairman North Dakota Sports Aviation Association West Fargo, ND 58078	James Loomis Aviation Director Preston Smith International Airport Lubbock, TX 79401	Patrick Rhodes Aviation Director Rick Husband Amarillo International Airport Amarillo, TX 79111

*A.7.1.6 Postcard Mailing List (Continued)*

David Holmes  
Spokane International Airport  
Spokane, WA 99224

Ben Trapnell  
UND Aerospace  
Grand Forks, ND 58202-9007

John Townsley Legislative Director  
Washington Pilots Association  
Spokane, WA 99205

Victor D. White Director of Airports  
Wichita Airport Authority  
Wichita, KS 67209

Terrance Brown  
Spokane Community College  
Spokane, WA 99217-5410

Mark Haught  
Altus High School  
Altus, OK 73521

Blair Elementary School  
Fairchild AFB, WA 99011

Arlen Honts  
Friends University  
Wichita, KS 67213

Russell Pritchard, Jr.  
Gonzaga University  
Spokane, WA 99258-0001

Vicki Ericson  
Grand Forks School District  
Grand Forks, ND 58201

Terry Munther  
Medical Lake School District  
Medical Lake, WA 99022-9737

Richard Schwasinger  
National Institute for Aviation Research  
Wichita, KS 67220

Park College 92 MSS/DPE  
Fairchild AFB, WA 99011-9469

Douglas McCormack  
Southwest Technical College  
Altus, OK

Bob Concannon  
University of North Dakota  
GFAFB, ND 58204

Al Palmer  
University of North Dakota  
Grand Forks, ND 58203

Doug McDonald  
Unmanned Applications Institute  
International  
Grand Forks, ND 58203

Kristy Greer  
Western Oklahoma State College  
Altus, OK 73521

Ken Towers  
Grand Forks AFB, Base Ambassador  
Grand Forks, ND 58201

North Dakota Army National Guard  
Devils Lake, ND 58301-8500


Lloyd Colston  
Altus Emergency Management Services  
Altus, OK 73521

Shaun Cecil  
Jackson County EMS  
Altus, OK 73521

David Sprynczynatyk Adjutant General  
ND Department of Emergency Services  
Bismark, ND 58506




### A.7.2.1 Displays (Continued)



## Altus Air Force Base (AFB)

On January 9, 2013, the U.S. Air Force (USAF) announced Altus AFB as a candidate installation for the KC-46A Formal Training Unit (FTU) mission or the First Main Operating Base (MOB 1) mission but not both missions. On May 22, 2013, the USAF announced Altus AFB as the preferred alternative for the FTU mission. For either the FTU or MOB mission, the existing KC-135 mission would remain at Altus AFB and would not change as a result of the KC-46A mission.

If selected as the beddown location for the FTU or the MOB 1, Altus AFB would need to accommodate training and flight operations necessary to support KC-46A pilots and operating personnel. For the FTU mission, up to eight KC-46A aircraft would be operated by one squadron and four auxiliary airfields would be used for flight training purposes. For the MOB 1 mission, 36 KC-46A aircraft would comprise three squadrons.



Location of Auxiliary Airfields for Altus AFB.

#### Auxiliary Airfields

For training purposes, as part of the FTU mission, the USAF would use existing auxiliary airfields for practicing various flight operations. For Altus AFB, the auxiliary airfields proposed to be used as part of this mission include:


- Clinton-Sherman Industrial Airpark, Oklahoma
- Fort Worth Alliance Airport, Texas
- Lubbock Preston Smith International Airport, Texas and
- Rick Husband Amarillo International Airport, Texas

These locations are currently being used as auxiliary airfields for the existing KC-135 FTU mission at Altus AFB. Although no ground-based activity would occur at these locations, the KC-46A would use these airfields for practice landings, and other aircraft operations similar to how they are being used by the existing KC-135 mission today.

#### Facilities

For the FTU and MOB 1 missions, in addition to receiving the aircraft, Altus AFB could require the following types of facilities to support the mission:

- Re-use of existing and construction of new hangars
- Re-use of existing and new buildings
- Aircraft parking
- Fuel facilities
- Base Service Support Infrastructure



Existing Facilities and Infrastructure at Altus AFB.

For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)



## Fairchild Air Force Base (AFB)

On January 9, 2013, the Air Force announced Fairchild AFB as a candidate installation for the KC-46A First Main Operating Base (MOB 1) mission.

If selected as the beddown location for the the First Main Operating Base (MOB 1), Fairchild AFB would need to accommodate training, and flight operations necessary to support KC-46A pilots, and operating personnel. The 36 KC-46A aircraft would comprise three squadrons. The new KC-46A aircraft would eventually replace the KC-135 aircraft, and the existing KC-135 mission would transform to the KC-46A MOB 1 mission.

#### Facilities

For the MOB 1 mission, in addition to receiving the aircraft, Fairchild AFB could require the following types of facilities to support the mission:

- Re-use of existing and construction of new hangars
- Re-use of existing and new buildings
- Aircraft parking
- Fuel facilities
- Base Service Support Infrastructure




Existing Facilities and Infrastructure at Fairchild AFB.

For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

### A.7.2.1 Displays (Continued)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown








## Grand Forks Air Force Base (AFB)



On January 9, 2013, the Air Force announced Grand Forks AFB as a candidate installation for the KC-46A First Main Operating Base (MOB 1) mission.

If selected as the beddown location for the the First Main Operating Base (MOB 1), Grand Forks AFB would need to accommodate training, and flight operations necessary to support KC-46A pilots, and operating personnel. The 36 KC-46A aircraft would comprise three squadrons. If Grand Forks AFB were to be selected for the MOB 1 mission, the existing Remotely Piloted Aircraft (RPA) mission would continue.



**Facilities**

For the MOB 1 mission, in addition to receiving the aircraft, Grand Forks AFB could require the following types of facilities to support the mission:

- Re-use of existing and construction of new hangars
- Re-use of existing and new buildings
- Aircraft parking
- Fuel facilities
- Base Service Support Infrastructure








Existing Facilities and Infrastructure at Grand Forks AFB

For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)


Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown





## McConnell Air Force Base (AFB)



On January 9, 2013, the U.S. Air Force (USAF) announced McConnell AFB as a candidate installation for the KC-46A Formal Training Unit (FTU) mission or the First Main Operating Base (MOB 1) mission but not both missions. On May 22, 2013, the USAF announced McConnell AFB as the preferred alternative for the MOB 1 mission. If selected for the KC-46A FTU mission, the existing KC-135 mission would remain at McConnell AFB and continue to operate as it does today. For the MOB 1 mission, the new KC-46A aircraft would eventually replace the KC-135 aircraft, and the existing KC-135 mission would transform to the KC-46A MOB 1 mission.



If selected as the beddown location for the FTU or the MOB 1, McConnell AFB would need to accommodate training and flight operations necessary to support KC-46A pilots, and operating personnel. For the FTU mission, up to eight KC-46A aircraft would be operated by one squadron and three auxiliary airfields would be used for flight training purposes. For the MOB 1 mission, 36 KC-46A aircraft would comprise three squadrons.




Location of Auxiliary Airfields for McConnell AFB

**Facilities**

For the FTU and MOB 1 missions, in addition to receiving the aircraft, McConnell AFB could require the following types of facilities to support the mission:

- Re-use of existing and construction of new hangars
- Re-use of existing and new buildings
- Aircraft parking
- Fuel facilities
- Base Service Support Infrastructure





Existing Facilities and Infrastructure at McConnell AFB

For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

### A.7.2.1 Displays (Continued)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown





### The National Environmental Policy Act (NEPA) and the Environmental Impact Statement (EIS) Process

NEPA is our national mandate for making informed decisions while considering environmental consequences. When federal agencies propose projects having the potential to impact the environment, NEPA requires the following process be undertaken as part of the planning process before final decisions are made: (1) evaluation and consideration of potential environmental consequences and (2) consideration of public and government agency comment. The graphic below shows the KC-46A Beddown EIS timeline for NEPA compliance.

**1 Notice of Intent (NOI) and Scoping**

The EIS began with the NOI, which was published in the *Federal Register* on March 26, 2013, announcing the U.S. Air Force's (USAF) intent to prepare an EIS on the KC-46A beddown. The NOI marked the beginning of the public scoping process, which included community scoping meetings held in April and concluded on May 17, 2013. The scoping period provided the public an opportunity to review the proposed action and alternatives and identify issues or recommendations for USAF consideration in the Draft EIS.



**2 Draft EIS Preparation**

The scoping period was followed by preparation of the Draft EIS. The USAF reviewed public and agency comments and prepared the Draft EIS to address environmental concerns identified during the scoping process. The Draft EIS:

- identifies and describes the affected environment,
- evaluates the potential environmental consequences from a range of reasonable alternatives, and
- identifies environmental permits and specific mitigation measures to avoid, minimize, or reduce environmental impacts if required.

**3 Draft EIS Public Review**

At this time, the USAF has distributed the Draft EIS to agencies and interested parties as well as filed it with the U.S. Environmental Protection Agency (USEPA). The notice of availability of the Draft EIS was posted in the *Federal Register* on October 25, 2013, which began the Draft EIS public review and comment period, scheduled to close on December 9, 2013. In late October 2013, the USAF also announced the availability of the Draft EIS via the Internet and in newspapers, press releases, and direct mailings to the project mailing list. The USAF is hosting public hearings in the communities potentially affected by the proposal to gather comments on the Draft EIS analysis from the public by December 9, 2013. Comments can also be submitted by mail or through the project website. When the public comment period closes, the USAF will analyze the comments, conduct further analysis as necessary, and prepare the Final EIS.

**4 Final EIS Preparation**

In the Final EIS, the USAF will respond to the substantive comments received from other government agencies and from members of the public. The response can be in the form of changes in the Final EIS, factual corrections, modifications to the analyses or the alternatives, new alternatives considered, or explanation of why a comment does not require the agency's response. A copy or a summary of substantive comments and the responses to them will be included in the Final EIS.

**5 FOIA and 30-Day Waiting Period**

When complete, the USAF will distribute the Final EIS to agencies and interested parties and file it with the USEPA. After filing, an NCA for the Final EIS will be published in the *Federal Register*, which begins the 30-day waiting period that must be observed before the USAF can make the decision on the action.

**6 Record of Decision (ROD)**


After the 30-day waiting period and considering the environmental consequences of the proposed action and alternatives and any additional comments that may have been received, the decision maker can select an alternative and issue a ROD. Once the ROD has been signed, the USAF will notify the public with a notice in the *Federal Register* as well as through press releases and other similar venues. The ROD states:

- what the decision is,
- identifies the alternatives considered, including the environmentally preferred alternative, and
- discusses mitigation plans, including any enforcement and monitoring commitments.

In the ROD, the agency discusses all the factors, including any considerations of national policy, that were contemplated when it reached its decision on whether to, and if so how to, proceed with the proposed action. The ROD will also discuss if all practical means to avoid or minimize environmental harm have been adopted, and if not, why they were not.

There are numerous opportunities to be involved in the EIS Process

#### The EIS Timeline



Opportunities for Public Involvement  
When We Ask How

1 Notice of Intent to conduct an Environmental Analysis on KC-46A Beddown published in *Federal Register* March 26, 2013  
Minimum 30-day Scoping Period Spring 2013

2 Preparation of Draft EIS Summer 2013

3 Notice of Availability of Draft EIS for public review published in *Federal Register* October 25, 2013  
Minimum 60-day Comment Period October 2013

4 Preparation of Final EIS Winter 2013

5 Notice of Availability of Final EIS published in *Federal Register* and 30-day EIS Waiting Period March/April 2014

6 Record of Decision (ROD)

Your involvement and participation are essential to the decision-making process

#### Draft EIS review period

Please take this opportunity to:

- Learn about the proposal,
- Identify community-specific issues,
- Make sure you are included on our mailing list, and
- Submit your Draft EIS comments.



Submit comments electronically at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com) or by mail before December 9, 2013, to:

Ms. Jean Reynolds  
USAF AFCE/CZN  
2261 Hughes Ave, Ste 168  
JBSA Lackland AFB, TX 78266-9853

For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown





### Environmental Resource Areas

The U.S. Air Force understands the potential for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) beddown to affect environmental resources. The Draft EIS analyzes the potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the completion of KC-46A training and flight operation activities. The environmental resource areas reviewed in the Draft EIS include those listed below. Airspace management and visual resources were not evaluated because there will be no new airspace proposed and no changes to the manner in which the existing airspace is used.


#### Airspace Operations

- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety




#### Natural Resources

- Soils
- Surface Water and Groundwater
- Floodplains




#### Biological Resources

- Vegetation
- Wildlife
- Special-Status Species
- Wetlands




#### Cultural Resources

- Archaeological
- Architectural
- Traditional Resources




#### Human Resources

- Land Use
- Socioeconomics
- Environmental Justice and Protection of Children



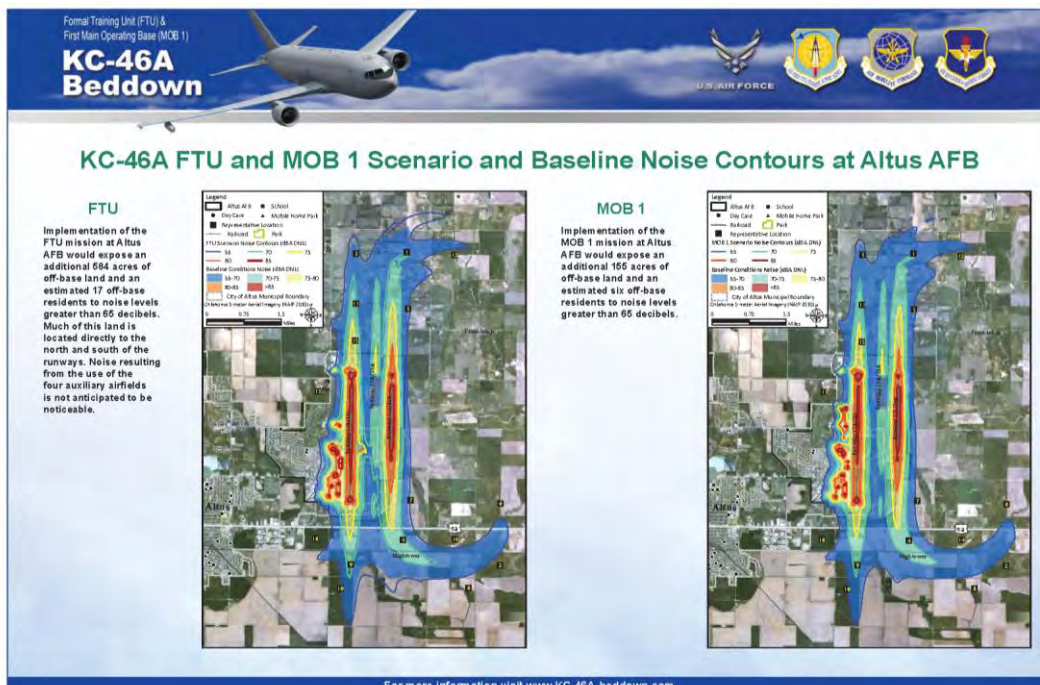
#### Community Infrastructure

- Infrastructure (utilities, transportation and public services)
- Hazardous Materials and Waste



For more information visit [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)

### A.7.2.1 Displays (Continued)



### A.7.2.2 Brochure



The U.S. Air Force (USAF) has prepared a Draft Environmental Impact Statement (EIS) to assess the potential environmental consequences of basing and operating the KC-46A tanker aircraft, associated infrastructure and manpower to establish the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). The USAF is hosting public hearings in the communities potentially affected by the proposal to gather comments on the Draft EIS analysis.

#### The National Environmental Policy Act (NEPA)

NEPA is our national mandate for making informed decisions while considering environmental impacts. When Federal agencies propose projects having the potential to significantly impact the environment, NEPA requires the following process be undertaken as part of planning before final decisions are made:

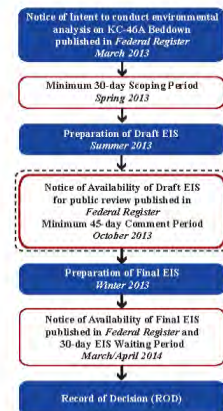
- Evaluation and consideration of potential environmental consequences for proposals that may significantly impact the environment, and
- Consideration of public and government agency comments.

Where the potential for significant environmental impacts exists, this evaluation is presented in an EIS, which:

- Identifies and describes the affected environment;
- Evaluates the potential environmental consequences from a range of reasonable alternatives; and
- Identifies environmental permits and specific mitigation measures that could avoid, minimize, or reduce potential environment consequences.

#### The EIS Timeline

Opportunities for Public Involvement  
 Where We Are Now



#### Draft EIS Public Review

At this time, the USAF has distributed the Draft EIS to agencies and interested parties as well as filed it with the U.S. Environmental Protection Agency (USEPA). The notice of availability of the Draft EIS was posted in the Federal Register on October 25, 2013, which began the Draft EIS public review and comment period, scheduled to close on December 9, 2013. In late October, the USAF also announced the availability of the Draft EIS via the internet and in newspapers, press releases, and direct mailings to the project mailing list. When the public comment period closes, the USAF will analyze the comments, conduct further analysis as necessary, and prepare the Final EIS.

#### Proposed Action: FTU and MOB 1 KC-46A Tanker Beddown

The KC-46A EIS evaluates the potential environmental consequences of two different actions:

1. Beddown of up to eight KC-46A tanker aircraft for one squadron at one base for the FTU; and
2. Beddown of 36 KC-46A aircraft for three squadrons at one base for the MOB 1.

#### The proposed FTU alternative locations are:

- Altus Air Force Base (AFB), Oklahoma\*
- McConnell AFB, Kansas

The FTU Mission would require the use of various auxiliary airfields in Oklahoma, Texas, and Kansas.

#### The proposed MOB 1 alternative locations are:

- Altus AFB, Oklahoma
- Fairchild AFB, Washington
- Grand Forks AFB, North Dakota
- McConnell AFB, Kansas\*

*\* In the Draft EIS, the USAF identifies Altus AFB as the Preferred Alternative for the FTU mission and McConnell AFB as the Preferred Alternative for the MOB 1 mission. However, no decision will be made as to final KC-46A FTU and MOB 1 beddown location(s) until the Record of Decision for this EIS has been signed.*

Altus AFB and McConnell AFB are being considered for both the FTU or MOB 1 missions. No base would be selected for both the FTU and MOB 1 missions.



U.S. Map of FTU and MOB 1 Alternative Bases

#### No-Action Alternative

Under the No-Action alternative, basing of the KC-46A aircraft would not occur at this time. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location, which will provide a baseline for decision-makers.



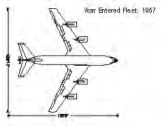

## A.7.2.2 Brochure (Continued)

**Purpose and Need: Tanker Modernization**

The selected basing locations would need to accommodate training, flight operations, and maintenance support as necessary to support KC-46A pilots and operating personnel. Each KC-46A squadron requires personnel, facilities, and airspace to support aircraft operations and pilot and personnel training.

The purpose of the KC-46A beddown is to provide locations for training and flight operations. The KC-46A tankers are needed to support a high-threat, multi-role warfighting capability to Commanders worldwide. Trained pilots and personnel must be available to meet necessary KC-46A scheduled inventory replenishment dates as older KC-135 tanker aircraft are withdrawn from the inventory.

**Comparison of KC-135 and KC-46A Aircraft Performance Capabilities**

Capability Area	KC-135	KC-46A
		
		
Primary Function	Aerial refueling and airlift with 200,000 lbs total fuel for refueling	Aerial refueling and airlift with 212,000 lbs total fuel for refueling
Boom Refueling	Manually controlled legacy system	Modernized KC-10 fly-by-wire system
Probe and Drogue Refueling	Permanent system does not exist - must be temporarily added	Permanent centerline probe and drogue system
Boom and Probe & Drogue Refueling on Same Mission	Not capable of both on same mission	Capable of using both refueling types on the same mission
Refueling of Two Aircraft at the Same Time	Limited to 20 tankers with the capability to attach wing pods and conduct multipoint refueling of two aircraft	All tankers have the capability to attach wing pods and conduct multipoint refueling
Cargo/Passenger/Medical Patient Capacity	6 cargo pallets, 53 passengers, 44 medical patients	18 cargo pallets, 114 passengers, 54 medical patients
Defensive Systems	Does not possess sufficient systems	Protection from nuclear, infrared (heat seeking missiles), and biochemical threats
Night-time Refueling	Restricted in tactical missions	Able to refuel in tactical missions

Source: GAO presentation of USAF information, © Boeing Company (KC-46A photo).

3

**Environmental Resources**

The USAF understands the potential for the KC-46A FTU and MOB 1 beddown to affect environmental resources. The Draft EIS analyzes the potential environmental consequences associated with changes made to support KC-46A operation and training, including changes in personnel, construction of facilities, and the completion of KC-46A training and flight operation activities. The environmental resource areas reviewed in the Draft EIS include those listed to the right. Airspace management and visual resources were not evaluated because there will be no new airspace proposed and no changes to the manner in which the existing airspace is used.

**Please take this opportunity to:**

- ☒ Learn about the proposal,
- ☒ Identify community-specific issues,
- ☒ Make sure you are included on our mailing list.
- ☒ Submit your Draft EIS comments

**Public Hearings**  
5:00 p.m. - 8:00 p.m.

**Nov. 12, 2013**  
McConnell AFB  
Eugene M. Hughes Metropolitan Complex, Room 180  
5015 E. 29th Street N., Wichita, KS

**Nov. 14, 2013**  
Altus AFB  
Southwest Technology Center  
711 W. Tamarack Road, Altus, OK

**Nov. 18, 2013**  
Grand Forks AFB  
Alerus Center, Hawk Meeting Room  
1200 42nd Street So., Grand Forks, ND

**Nov. 20, 2013**  
Fairchild AFB  
The Lincoln Center, Monroe Ballroom  
1316 N. Lincoln Street, Spokane, WA

**Environmental Resource Areas include:****Airspace Operations**

- Noise
- Air Quality
- Safety
  - Flight Safety
  - Ground Safety

**Natural Resources**

- Soils
- Surface Water and Groundwater
- Floodplains

**Biological Resources**

- Vegetation
- Wildlife
- Special-Status Species
- Wetland

**Cultural Resources**

- Archaeological
- Architectural,
- Traditional Resources

**Human Resources**

- Land Use
- Socioeconomics
- Environmental Justice and Protection of Children

**Community Infrastructure**

- Infrastructure (utilities, transportation, and public services)
- Hazardous Materials and Waste

**How to Submit Comments**

Submit comments electronically at [www.KC-46A-beddown.com](http://www.KC-46A-beddown.com) at a public hearing, or by mail before **December 9, 2013**, to:

Ms. Jean Reynolds  
USAF AFCEC/CZN  
2261 Hughes Ave, Ste. 155  
JB SA Lackland AFB, TX 78236-9853

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A.7.2.3 Presentation and Script

SLIDE 1. (START OF HEARING)



KC 46-A Beddown Draft Public Hearing Script

1

2013-10-30

SLIDE 2. (WELCOME)



MEETING ADMINISTRATION

(AIR FORCE JUDGE) ASK ATTENDEES TO PLEASE TAKE THEIR SEATS AND SILENCE CELL PHONES, AND REMIND THEM THAT, TIME PERMITTING, THE AIR FORCE REPRESENTATIVES WILL REMAIN AFTER THE FORMAL HEARING TO FURTHER DISCUSS THE PROPOSAL IF THEY DESIRE.

THE TIME IS 6:00 PM AND WE WILL NOW START THE HEARING. THANK YOU FOR ATTENDING THIS PUBLIC HEARING FOR THE DRAFT ENVIRONMENTAL IMPACT STATEMENT OR DRAFT EIS FOR THE PROPOSED FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE BEDDOWN OF THE KC-46A TANKER AIRCRAFT.

I'M LT COL NATALIE RICHARDSON AND I'LL BE YOUR HEARING OFFICER TONIGHT. I AM AN AIR FORCE JUDGE AND WILL BE ACTING AS THE MODERATOR TONIGHT. AS THE MODERATOR, MY ROLE IS TO ENSURE THAT

KC 46-A Beddown Draft Public Hearing Script

2

2013-10-30

### A.7.2.3 Presentation and Script (Continued)

THE AIR FORCE PROVIDES A FAIR, ORDERLY, AND IMPARTIAL HEARING WHERE YOU HAVE AN OPPORTUNITY TO MAKE COMMENTS ON THE PROPOSAL. I DO NOT WORK FOR ANYONE AT AIR MOBILITY COMMAND, THE AIR FORCE CIVIL ENGINEER CENTER, AIR EDUCATION AND TRAINING COMMAND, OR ANY OF THE AIR FORCE BASES UNDER CONSIDERATION FOR THE PROPOSED ACTION. I AM NOT INVOLVED IN ANY WAY WITH THE DEVELOPMENT OF THIS DRAFT EIS, AND I DO NOT ACT AS A LEGAL ADVISOR TO THE AIR FORCE REPRESENTATIVES WORKING ON THIS PROPOSAL.

THIS HEARING IS HELD IN ACCORDANCE WITH THE PROVISIONS OF THE NATIONAL ENVIRONMENTAL POLICY ACT (NEPA) AS IMPLEMENTED BY THE COUNCIL ON ENVIRONMENTAL QUALITY REGULATIONS AND THE AIR FORCE. WE ARE HERE TONIGHT TO PRESENT INFORMATION ON THE ENVIRONMENTAL IMPACTS OF THE PROPOSED KC-46A BEDDOWN AND TO TAKE YOUR COMMENTS ON THE DRAFT EIS.

TONIGHT'S HEARING IS ONE OF SEVERAL OPPORTUNITIES FOR PUBLIC COMMENTS. THIS HEARING IS AN OPPORTUNITY FOR YOU TO EXPRESS YOUR VIEWS AND CONCERNS ABOUT THE ADEQUACY OF THE ENVIRONMENTAL ANALYSIS CONTAINED IN THE DRAFT EIS, AS WELL AS ANY ISSUES RELATED TO THE NATIONAL ENVIRONMENTAL POLICY ACT PROCESS. THIS HEARING IS NOT A DEBATE OR A VOTE ON THE DRAFT EIS AND IT IS NOT A QUESTION AND ANSWER SESSION. WE WELCOME YOUR INPUT ON THE ENVIRONMENTAL ANALYSIS PRESENTED IN THE DRAFT EIS. COMMENTS ABOUT OTHER UNRELATED ISSUES CAN CERTAINLY BE MADE, BUT THEY WILL NOT ASSIST IN THE DECISION MAKING PROCESS FOR THE DRAFT EIS.

#### SLIDE 3 (NEPA TEAM MEMBERS)



### NEPA Team Members



- Lt Col Natalie Richardson, Hearing Officer
- Col Todd Cargle, AMC A5/A8P
- Ms. Jean Reynolds, AFCEC/CZN



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I WOULD LIKE TO BEGIN THIS HEARING BY INTRODUCING THE NEPA TEAM. BEGINNING WITH THE TEAM LEADER, COL. TODD CARGLE, WITH THE AIR MOBILITY COMMAND, WHO WILL PRESENT DETAILS OF THE PROPOSED ACTION AND ALTERNATIVES. NEXT IS MS. JEAN REYNOLDS, EIS PROJECT MANAGER AT THE AIR FORCE NEPA CENTER, WHO WILL DISCUSS RESULTS OF THE NEPA PROCESS. REPRESENTATIVES FROM (ALTUS, FAIRCHILD, GRAND FORKS, MCCONNELL, AIR FORCE BASES) LED BY (NAME OF CC PRESENT) ARE PRESENT. ALTHOUGH NOT A PART OF THE ANALYSIS TEAM, THEY HAVE PROVIDED DETAILED BASE INFORMATION WHICH IS CRITICAL TO A THOROUGH ANALYSIS OF IMPACTS IN THIS DRAFT EIS. LASTLY, REPRESENTATIVES FROM LEIDOS ARE HERE SUPPORTING THE AIR FORCE AS THE CONTRACTOR. TRANSCRIBING TONIGHT'S HEARING IS (READ FROM BUSINESS CARD). I WOULD ALSO LIKE TO RECOGNIZE THE FOLLOWING INDIVIDUALS PRESENT THIS EVENING: (READ FROM BUSINESS CARDS).

### A.7.2.3 Presentation and Script (Continued)

#### SLIDE 4 (PUBLIC HEARING AGENDA)



## Public Hearing Agenda



- **PART 1: Air Force Presentation**
  - Description of the Proposed Action and Alternatives
  - Draft Environmental Impact Statement (EIS) Review Process
  - Description of Anticipated Environmental Consequences
- **PART 2: Formal Draft EIS Comment Opportunity**
  - Statements for the Record
  - Transcribed by Court Reporter

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COL CARGLE WILL FIRST PRESENT INFORMATION ON THE PROPOSED ACTION AND THE ALTERNATIVES. THEN, MS. REYNOLDS WILL PROVIDE AN OVERVIEW OF THE NEPA PROCESS AND WILL SUMMARIZE THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF THE PROPOSAL.

AFTER THEIR PRESENTATIONS, WHICH SHOULD TAKE ABOUT 20 MINUTES, WE WILL BEGIN OUR ORAL COMMENT PERIOD, DURING WHICH YOU CAN PROVIDE INPUT ON THE PROPOSED ACTION, DRAFT EIS ANALYSIS, AND POTENTIAL ENVIRONMENTAL IMPACTS. YOUR COMMENTS WILL BECOME PART OF THE OFFICIAL RECORD OF THE FINAL EIS. PLEASE NOTE THAT INFORMAL DISCUSSIONS AT OUR INFORMATIONAL DISPLAYS WILL NOT BECOME PART OF THE EIS RECORD, SO IF YOU HAVE ITEMS OF CONCERN ABOUT THE ANALYSIS IN THE DRAFT EIS YOU WOULD LIKE TO BRING TO OUR ATTENTION, PLEASE DO SO DURING OUR FORMAL COMMENT OPPORTUNITY OR IN WRITING.

#### SLIDE 5 (WRITTEN COMMENTS)



## Written Comments



- **Complete and turn in comments tonight**
- **Submit on the internet at:**  
**[www.KC-46A-beddown.com](http://www.KC-46A-beddown.com)**
- **Mail to:**  
**Ms. Jean Reynolds**  
**AFCEC/CZN Bldg. 171**  
**2261 Hughes Av. Suite 155**  
**Lackland, AFB TX 78236**  
**Deadline for submittal**  
**(Postmarked): Dec. 9, 2013**

Libraries With Draft EIS Copies	
<b>Altus Area:</b>	<ul style="list-style-type: none"> <li>• Altus Public Library, 421 N. Hudson Street, Altus, OK</li> <li>• Lawton Public Library, 110 SW 4<sup>th</sup> Street, Lawton, OK</li> <li>• Altus AFB Library, 109 E Avenue, Bldg. 65</li> <li>• Amarillo Public Library, 413 SE 4<sup>th</sup> Ave, Amarillo, TX*</li> <li>• Western Plains Library System, Clinton, OK*</li> <li>• Mahon Public Library, 1306 9<sup>th</sup> St Lubbock, TX*</li> <li>• Summerlin Library, 4205 Basswood Blvd, Fort Worth, TX*</li> </ul>
<b>Spokane Area:</b>	<ul style="list-style-type: none"> <li>• Spokane Public Library, 906 W Main Ave., Spokane, WA</li> <li>• Fairchild AFB Library, 2 W. Castle St.</li> </ul>
<b>Grand Forks Area:</b>	<ul style="list-style-type: none"> <li>• Grand Forks Public Library, 2110 Library Cir., Grand Forks, ND</li> <li>• Grand Forks AFB Library, 511 Holzapfel Street</li> </ul>
<b>Wichita Area:</b>	<ul style="list-style-type: none"> <li>• Central Library, 223 S. Main, Wichita, KS*</li> <li>• McConnell AFB Library, 53476 Wichita St. Bldg. 412</li> <li>• Topeka &amp; Shawnee County Public Library, 1515 SW 10<sup>th</sup> Ave., Topeka, KS*</li> </ul>
* - FTU Mission Auxiliary Airfield Location Library	
<b>Download from our website:</b> <b><a href="http://www.KC-46A-beddown.com">www.KC-46A-beddown.com</a></b>	

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IF YOU DO NOT CHOOSE TO MAKE AN ORAL COMMENT, YOU CAN SUBMIT WRITTEN COMMENTS EITHER BY TURNING IN A COMMENT FORM THIS EVENING OR BY MAILING IT TO THE ADDRESS SHOWN ON THE SCREEN. COMMENTS MAY ALSO BE SUBMITTED ONLINE AT [WWW.KC-46A-BEDDOWN.COM](http://WWW.KC-46A-BEDDOWN.COM).

IF YOU HAVE NOT HAD A CHANCE TO REVIEW THE DRAFT EIS, IT IS AVAILABLE ON THE WEBSITE, OR AT ONE OF THE PUBLIC LIBRARIES LISTED HERE.

THE AIR FORCE WELCOMES PUBLIC COMMENTS IN WRITING AT ANY TIME DURING THE ENVIRONMENTAL IMPACT ANALYSIS PROCESS. TO RECEIVE TIMELY CONSIDERATION FOR THE FINAL EIS, PLEASE SUBMIT YOUR COMMENTS BY DECEMBER 9 2013. YOUR COMMENTS WILL PROVIDE THE DECISION-MAKER (THE SECRETARY OF THE AIR FORCE) WITH INFORMATION TO ASSIST IN MAKING A DECISION REGARDING WHERE THE FORMAL

### A.7.2.3 Presentation and Script (Continued)

TRAINING UNIT, OR FTU, AND FIRST MAIN OPERATING BASE, OR MOB 1, WILL BE LOCATED. YOUR COMMENTS DURING THIS PROCESS PROVIDE THE BENEFIT OF YOUR KNOWLEDGE OF THE LOCAL AREA AND YOUR CONCERNS ABOUT THE ENVIRONMENTAL IMPACTS OR ANALYSIS.

WE'LL NOW MOVE INTO THE BRIEFINGS. DURING THE BRIEFINGS, OUR SPEAKERS WILL BE READING FROM PREPARED SCRIPTS. THE BRIEFINGS ARE WRITTEN TO MAKE CERTAIN EACH SPEAKER COVERS ALL PERTINENT INFORMATION AND THAT IT IS CONSISTENT FOR ALL FOUR HEARINGS. WITH THAT, I'LL TURN THE MIC OVER TO COL. CARGLE.

#### SLIDE 6. (PURPOSE AND NEED)



### Purpose and Need for the Proposed Action



#### ■ Tanker Modernization

- KC-46A tankers needed to support a high-threat, multi-role war fighting capability to Commanders worldwide
- Trained aircrew, maintenance and support personnel must be available to meet KC-46A inventory delivery dates as legacy tanker aircraft are removed from the inventory

#### ■ In comparison to aging KC-135 aircraft, the KC-46A can:

- Refuel Certified Fixed-Wing Aircraft on Any Mission (boom and drogue refueling capabilities on same sortie)
- Refuel multiple aircraft at once (Multi-point air refueling capability)
- Increase airlift capability
- Improve force protection and survivability

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SPEAKER: COL CARGLE

GOOD EVENING AND WELCOME, I'M COL TODD CARGLE, REPRESENTING (AIR MOBILITY COMMAND). (I AM - BRIEF BIO SHOWING EXPERTISE). WELCOME TO THIS EVENING'S MEETING.

AS THE TEAM LEADER, I ENCOURAGE YOU TO ASSIST THE AIR FORCE IN MEETING ITS REQUIREMENTS TO COMPLY WITH THE NEPA PROCESS. YOUR ATTENDANCE TONIGHT INDICATES YOUR INTEREST IN THIS PROPOSED ACTION, AND I HOPE YOUR COMMENTS WILL PROVIDE US WITH IMPROVEMENTS OR AREAS WHERE FURTHER ANALYSIS IS NEEDED. ALL COMMENTS WILL BE PROPERLY REVIEWED, ANALYZED, AND ADDRESSED IN THE FINAL EIS.

THE PURPOSE OF THE PROPOSED ACTION INVOLVES THE KC-46A'S ROLE IN THE AIR FORCE TANKER FLEET MODERNIZATION EFFORT. THE GOAL OF THIS

### A.7.2.3 Presentation and Script (Continued)

EFFORT IS TO ENSURE FUTURE TANKERS ARE THE BEST AVAILABLE TO SUPPORT A HIGH-THREAT, MULTI-ROLE WAR FIGHTING CAPABILITY TO COMMANDERS WORLDWIDE. TO PERFORM THIS MISSION, TRAINED AIRCREWS, MAINTENANCE, & SUPPORT PERSONNEL MUST BE AVAILABLE TO MEET KC-46A INVENTORY DELIVERY DATES AS OLDER TANKER AIRCRAFT ARE REMOVED FROM THE INVENTORY.

WHILE WE WILL CONTINUE TO OPERATE THE LEGACY TANKER FLEET OF AIRCRAFT THE KC-46A PROVIDES SEVERAL ADVANTAGES INCLUDING:

- ABILITY TO REFUEL ANY CERTIFIED FIXED-WING AIRCRAFT ON ANY MISSION
- CAPABLE OF REFUELING MULTIPLE AIRCRAFT AT ONCE
- INCREASED AIRLIFT CAPABILITY
- RECEIVER AIR REFUELING, AND
- IMPROVED FORCE PROTECTION AND SURVIVABILITY

#### SLIDE 7. (DESCRIPTION OF THE PROPOSED ACTION)



## Description of the Proposed Action



**Formal Training Unit (FTU) Base**

FTU mission: train personnel to safely & effectively fly, operate & maintain KC-46A aircraft.

**Main Operating Base (MOB) 1**

MOB 1 mission: provide KC-46A for worldwide refueling, cargo, or aeromedical evacuation support.



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THE AIR FORCE IS PROPOSING TO ESTABLISH AN FTU AND FIRST MOB FOR KC-46A AIRCRAFT ALONG WITH REQUIRED INFRASTRUCTURE AND MANPOWER AT TWO ACTIVE DUTY AIR FORCE BASES IN THE CONTINENTAL UNITED STATES.

THE FTU WILL HAVE A TRAINING MISSION – TO TRAIN PERSONNEL TO SAFELY AND EFFECTIVELY FLY AND OPERATE KC-46A AIRCRAFT. THE OPERATIONAL MOB 1 MISSION UTILIZES PILOTS, COPILOTS, BOOM OPERATORS AND OTHER SUPPORT STAFF WHO OPERATE AND MAINTAIN THE AIRCRAFT TO PROVIDE WORLDWIDE REFUELING, CARGO, OR AEROMEDICAL EVACUATION SUPPORT.

### A.7.2.3 Presentation and Script (Continued)

#### SLIDE 8. PROPOSED ACTION DETAILS (ALTERNATIVES)

##### Description of the Proposed Action Alternatives

- **Action Alternatives:**
  - Beddown of up to eight KC-46A aircraft for one squadron at one base for the FTU
  - Beddown of 36 KC-46A aircraft for three squadrons at one base for MOB 1.
- **No-Action Alternative:** Basing of the KC-46A aircraft would not occur. A No-Action alternative will be evaluated for environmental consequences at each proposed beddown location to provide a baseline for decision-makers.

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THE ACTION ALTERNATIVE CONSISTS OF TWO PARTS. THE FIRST PART IS THE KC-46A FTU BEDDOWN, WHICH PLACES UP TO EIGHT KC-46A TANKER AIRCRAFT FOR ONE SQUADRON AT ONE BASE.

THE SECOND PART OF THE ACTION ALTERNATIVE IS SELECTION OF THE FIRST KC-46A MOB. THIS ACTION PLACES 36 KC-46A AIRCRAFT IN THREE SQUADRONS AT ONE BASE.

THE NO-ACTION ALTERNATIVE IS REQUIRED BY NEPA AND WAS EVALUATED AT EACH PROPOSED BEDDOWN LOCATION TO PROVIDE A BASELINE FOR DECISION-MAKERS. THE NO ACTION ALTERNATIVE EVALUATES THE ENVIRONMENTAL CONSEQUENCES OF NOT BASING THE KC-46A AIRCRAFT AT ANY BASE.

#### SLIDE 9. PROPOSED ACTION DETAILS (BEDDOWN LOCATION MAP)

##### Proposed Action Details Beddown Locations




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IN THE DRAFT EIS, THE AIR FORCE ANALYZED THE ENVIRONMENTAL CONSEQUENCES OF BASING THE FTU AT ALTUS AIR FORCE BASE IN OKLAHOMA OR MCCONNELL AIR FORCE BASE IN KANSAS. THE AIR FORCE ALSO ANALYZED THE ENVIRONMENTAL CONSEQUENCES OF BASING THE MOB 1 AT ALTUS AFB IN OKLAHOMA, FAIRCHILD AFB IN WASHINGTON, GRAND FORKS AFB IN NORTH DAKOTA OR AT MCCONNELL AIR FORCE BASE IN KANSAS.


NO BASE WOULD BE SELECTED TO HOST BOTH THE KC-46A FTU AND MOB 1 MISSIONS.

## A.7.2.3 Presentation and Script (Continued)

## SLIDE 10. PROPOSED ACTION DETAILS (INSTALLATION MISSION)



**Proposed Action Details –  
Base Mission**




Base	FTU Proposed Basing Alternative	MOB 1 Proposed Basing Alternative	Details
Altus AFB*	X	X	If selected for the KC-46A FTU or MOB 1, the existing KC-135 mission would remain and continue to operate.
Fairchild AFB		X	If selected for the KC-46A MOB 1 mission, the existing KC-135 mission transfers to the KC-46A.
Grand Forks AFB		X	If selected, for the KC-46A MOB 1 mission, the Remotely Piloted Aircraft (RPA) missions would continue to operate.
McConnell AFB*	X	X	If selected for the KC-46A MOB 1 mission, the existing KC-135 mission transfers to the KC-46A.

\*Bases would be considered for either FTU or MOB 1 missions, but not both


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IN MAY OF THIS YEAR, THE SECRETARY OF THE AIR FORCE ANNOUNCED ALTUS AIR FORCE BASE AS THE PREFERRED ALTERNATIVE FOR THE KC-46A FTU. MCCONNELL AIR FORCE BASE WAS SELECTED AS THE PREFERRED ALTERNATIVE FOR THE FIRST KC-46A MAIN OPERATING BASE. FAIRCHILD AND GRAND FORKS WERE ANNOUNCED AS REASONABLE ALTERNATIVES FOR THE MOB 1. THIS TABLE SUMMARIZES THE BASES BEING CONSIDERED FOR EACH KC-46A MISSION AND HOW THE EXISTING MISSIONS COULD BE IMPACTED. THE FOLLOWING SLIDE(S) SUMMARIZE THE AIRCRAFT FACILITIES AND MANPOWER CHANGES ANTICIPATED TO BE REQUIRED TO SUPPORT THE KC-46A MISSION.

## SLIDE 11. (ALTUS AFB FTU PREFERRED ALTERNATIVE)



**Altus AFB  
(FTU Preferred Alternative)**



Aircraft/Facilities/Manpower	FTU Mission
Number of KC-46A aircraft	Up to 8
Facilities*	10 different projects
Population Change <small>(full time military and dependents plus students)</small>	578
Auxiliary Airfield Use	Yes
Annual Aircraft Operations	38% Increase
<small>*Facilities projects could include new construction, demolition, renovation or additions/alternations</small>	

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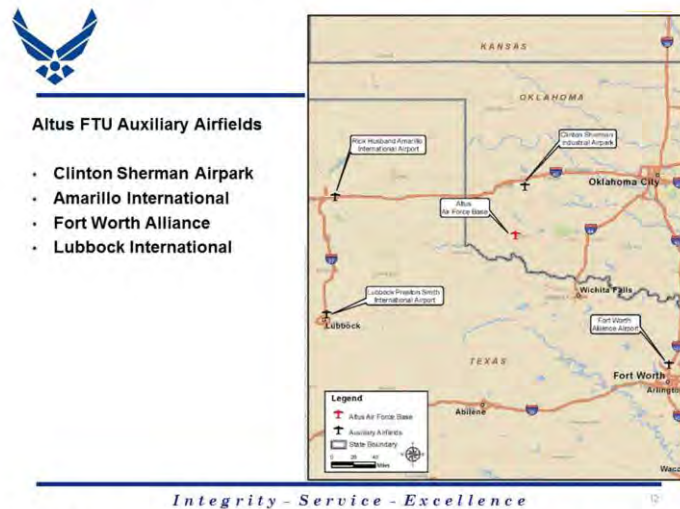
IF ALTUS IS SELECTED FOR THE KC-46A FTU OR THE MOB 1 MISSION, THE EXISTING KC-135 AND C-17 MISSIONS WOULD REMAIN AND CONTINUE TO OPERATE.

IMPLEMENTATION OF THE FTU MISSION WOULD REQUIRE A VARIETY OF ON-BASE DEVELOPMENT PROJECTS INCLUDING DEMOLITION, NEW CONSTRUCTION AND RENOVATION. THE FTU MISSION WOULD INCREASE THE AREA POPULATION BY APPROXIMATELY 578 PEOPLE INCLUDING ESTIMATED DEPENDENTS AND WOULD RESULT IN A 38 PERCENT INCREASE IN ANNUAL AIRCRAFT OPERATIONS.

AT EACH BASE, KC-46A AIRCREWS WOULD UTILIZE THE EXISTING KC-135 FLIGHT TRACKS, AIR REFUELING TRACKS, AND FUEL JETTISON AREAS (IF NECESSARY).

A.7.2.3 Presentation and Script (Continued)

SLIDE 12. (ALTUS FTU AUXILIARY AIRFIELDS)



KC-46A AIRCREWS ASSOCIATED WITH THE FTU WOULD USE THE SAME FOUR AUXILIARY AIRFIELDS THAT ARE CURRENTLY BEING USED BY KC-135 AIRCREWS. THESE INCLUDE CLINTON-SHERMAN INDUSTRIAL AIRPARK, LUBBOCK PRESTON SMITH INTERNATIONAL AIRPORT, RICK HUSBAND AMARILLO INTERNATIONAL AIRPORT, AND FORT WORTH ALLIANCE AIRPORT.



SLIDE 13. (ALTUS MOB 1 MISSION)



IMPLEMENTATION OF THE MOB 1 MISSION WOULD RESULT IN MORE NEW CONSTRUCTION, DEMOLITION AND RENOVATION THAN THE FTU MISSION AND WOULD INCREASE THE POPULATION BY APPROXIMATELY 4,917 PEOPLE INCLUDING ESTIMATED DEPENDENTS. ANNUAL AIRCRAFT OPERATIONS WOULD ALSO INCREASE BY APPROXIMATELY 31 PERCENT. KC-46A AIRCREWS ASSOCIATED WITH MOB 1 AT ALL OF THE BASES WOULD NOT USE AUXILIARY AIRFIELDS.

A.7.2.3 *Presentation and Script (Continued)*

## SLIDE 14. (FAIRCHILD AFB MOB 1 MISSION)






Fairchild AFB (MOB 1 Mission)	
Aircraft/Facilities/Manpower	MOB 1 Mission
Number of KC-46A aircraft	36
Facilities*	27 different projects
Population Change (full time military and dependents)	1,095
Auxiliary Airfield Use	No
Annual Aircraft Operations	62% Increase
*Facilities projects could include new construction, demolition, renovation or additions/alternations	
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FAIRCHILD AIR FORCE BASE HAS BEEN IDENTIFIED AS AN ALTERNATIVE FOR THE MOB 1 MISSION. IF FAIRCHILD IS SELECTED TO HOST THE MOB 1 MISSION, THE EXISTING 30 KC-135 AIRCRAFT WOULD BE REPLACED WITH 36 KC-46A AIRCRAFT.

IMPLEMENTATION OF THE MOB 1 MISSION WOULD REQUIRE A VARIETY OF ON-BASE DEVELOPMENT PROJECTS INCLUDING DEMOLITION, NEW CONSTRUCTION AND RENOVATION. THIS MISSION WOULD INCREASE THE AREA POPULATION BY APPROXIMATELY 1,095 PEOPLE INCLUDING ESTIMATED DEPENDENTS AND WOULD RESULT IN A 62 PERCENT INCREASE IN ANNUAL AIRCRAFT OPERATIONS.

## SLIDE 15. (GRAND FORKS AFB MOB 1 MISSION)



Grand Forks AFB (MOB 1 Mission)	
Aircraft/Facilities/Manpower	MOB 1 Mission
Number of KC-46A aircraft	36
Facilities*	27 different projects
Population Change (full time military and dependents)	4,526
Auxiliary Airfield Use	No
Annual Aircraft Operations	226% Increase
*Facilities projects could include new construction, demolition, renovation or additions/alternations	
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GRAND FORKS AIR FORCE BASE HAS BEEN IDENTIFIED AS AN ALTERNATIVE FOR THE MOB 1 MISSION. IF GRAND FORKS IS SELECTED TO HOST THE MOB 1 MISSION, THE EXISTING REMOTELY PILOTED AIRCRAFT MISSIONS WOULD CONTINUE AND THE KC-46A MISSION WOULD CONSTITUTE AN ADDITIONAL MISSION.

IMPLEMENTATION OF THE MOB 1 MISSION WOULD REQUIRE A VARIETY OF ON-BASE DEVELOPMENT PROJECTS INCLUDING DEMOLITION, NEW CONSTRUCTION AND RENOVATION. THIS MISSION WOULD INCREASE THE AREA POPULATION BY APPROXIMATELY 4,526 PEOPLE INCLUDING ESTIMATED DEPENDENTS AND WOULD RESULT IN A 226 PERCENT INCREASE IN ANNUAL AIRCRAFT OPERATIONS.

A.7.2.3 *Presentation and Script (Continued)*



SLIDE 16. (MCCONNELL AFB MOB 1 PREFERRED ALTERNATIVE)

 <b>McConnell AFB</b> <b>(MOB 1 Preferred Alternative)</b> 	
Aircraft/Facilities/Manpower	MOB 1 Mission
Number of KC-46A aircraft	36
Facilities*	32 different projects
Population Change (full time military and dependents)	-291
Auxiliary Airfield Use	No
Annual Aircraft Operations	24% Increase
*Facilities projects could include new construction, demolition, renovation or additions/alternations	
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IF MCCONNELL AIR FORCE BASE IS SELECTED TO HOST THE MOB 1 MISSION, THE EXISTING 44 KC-135 AIRCRAFT WOULD BE REPLACED BY 36 KC-46A AIRCRAFT.

IMPLEMENTATION OF THE MOB 1 MISSION WOULD REQUIRE A VARIETY OF ON-BASE DEVELOPMENT PROJECTS INCLUDING DEMOLITION, NEW CONSTRUCTION AND RENOVATION. THIS MISSION WOULD DECREASE THE AREA POPULATION BY APPROXIMATELY 291 PEOPLE INCLUDING ESTIMATED DEPENDENTS AND WOULD RESULT IN A 24 PERCENT INCREASE IN ANNUAL AIRCRAFT OPERATIONS.

SLIDE 17. (MCCONNELL AFB FTU MISSION)

 <b>McConnell AFB</b> <b>(FTU Mission)</b> 	
Aircraft/Facilities/Manpower	FTU Mission
Number of KC-46A aircraft	Up to 8
Facilities*	14 different projects
Population Change (full time military and dependents plus students)	570
Auxiliary Airfield Use	Yes
Annual Aircraft Operations	107% Increase
*Facilities projects could include new construction, demolition, renovation or additions/alternations	
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FOR THE PURPOSES OF THIS DRAFT EIS, MCCONNELL AFB WAS EVALUATED FOR THE POTENTIAL ENVIRONMENTAL IMPACTS ASSOCIATED WITH IMPLEMENTATION OF THE FTU MISSION. THIS EVALUATION WAS CONDUCTED UNDER THE ASSUMPTION THAT THE EXISTING KC-135 MISSION WOULD REMAIN IN PLACE.

IMPLEMENTATION OF THE FTU MISSION WOULD RESULT IN LESS NEW CONSTRUCTION, DEMOLITION AND RENOVATION THAN THE MOB 1 MISSION AND WOULD INCREASE THE POPULATION BY APPROXIMATELY 570 PEOPLE INCLUDING ESTIMATED DEPENDENTS. ANNUAL AIRCRAFT OPERATIONS WOULD ALSO INCREASE BY APPROXIMATELY 107 PERCENT.

### A.7.2.3 Presentation and Script (Continued)

SLIDE 18. (MCCONNELL AFB FTU AUXILIARY AIRFIELDS)



KC-46A AIRCREWS ASSOCIATED WITH THE FTU WOULD ALSO USE THREE AUXILIARY AIRFIELDS THAT ARE CURRENTLY BEING USED BY KC-135 AIRCREWS. THESE AIRFIELDS INCLUDE CLINTON-SHERMAN INDUSTRIAL AIRPARK, FORBES FIELD, AND WICHITA MID-CONTINENT AIRPORT.

SLIDE 19. (FTU AND MOB 1 BEDDOWN ALTERNATIVES)




WE WOULD LIKE TO EMPHASIZE THAT, ALTHOUGH PREFERRED ALTERNATIVES FOR THE FTU AND MOB 1 HAVE BEEN ANNOUNCED, NO FINAL DECISION HAS BEEN MADE ON BASING EITHER OF THE TWO KC-46A MISSIONS CURRENTLY UNDER ANALYSIS IN THE DRAFT EIS. WE LOOK FORWARD TO INPUTS PROVIDED FROM THE PUBLIC AND AFFECTED COMMUNITIES AS WE PROCEED THROUGH THE ENVIRONMENTAL IMPACT ANALYSIS. ONCE THE REQUIREMENTS OF THE ENVIRONMENTAL IMPACT ANALYSIS PROCESS ARE COMPLETE, THE AIR FORCE WILL MAKE ITS FINAL BASING DECISION.


THANK YOU FOR YOUR ATTENTION. I WILL NOW TURN THE PRESENTATION OVER TO MS. JEAN REYNOLDS, THE AIR FORCE PROJECT MANAGER FOR THE EIS, TO DISCUSS THE NEPA PROCESS AND PROVIDE GREATER DETAIL ON POTENTIAL IMPACTS AS DESCRIBED IN THE DRAFT EIS.

A.7.2.3 *Presentation and Script (Continued)*



SLIDE 20. (NEPA)



## National Environmental Policy Act (NEPA)



- Applies to All Federal Agencies
- Evaluates the Potential Environmental Consequences of Federal Actions
- Evaluates the Proposed Action and Reasonable Alternatives, including the No Action Alternative
- Air Force implementing regulations at: 32 CFR, Part 989



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IS MADE BY THE AIR FORCE ON THIS PROPOSAL. YOUR INPUT DURING THE PAST PUBLIC SCOPING PERIOD AND THIS PUBLIC COMMENT PERIOD WILL HELP THE SECRETARY OF THE AIR FORCE MAKE THE MOST INFORMED DECISION POSSIBLE ON THIS PROPOSAL.

SPEAKER: MS. JEAN REYNOLDS

GOOD EVENING, I AM JEAN REYNOLDS, THE AIR FORCE NEPA CENTER PROJECT MANAGER FOR THE ANALYSIS OF THIS PROPOSED ACTION. I AM HERE TONIGHT TO DISCUSS THE RESULTS OF THE ENVIRONMENTAL IMPACT ANALYSIS FOR THE PROPOSAL PRESENTED BY COL CARGLE.

THE DRAFT EIS HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF NEPA, WHICH REQUIRES FEDERAL AGENCIES TO ANALYZE THE POTENTIAL ENVIRONMENTAL CONSEQUENCES OF A PROPOSED ACTION, AND REASONABLE ALTERNATIVES – INCLUDING A NO ACTION ALTERNATIVE - BEFORE ANY ACTION IS TAKEN. THE GOAL OF CONDUCTING AN EIS IS TO SUPPORT SOUND DECISIONS THROUGH THE ASSESSMENT OF POTENTIAL ENVIRONMENTAL CONSEQUENCES AS WELL AS INVOLVING THE PUBLIC IN THE PROCESS. THE RESULTS OF THIS ANALYSIS AND OTHER RELEVANT FACTORS WILL BE CONSIDERED BEFORE A DECISION

### A.7.2.3 Presentation and Script (Continued)

SLIDE 21. (THE EIS PROCESS TIMELINE)



AS YOU CAN SEE ON THIS SLIDE, THERE ARE SEVERAL KEY STEPS TO THE ENVIRONMENTAL IMPACT ANALYSIS PROCESS. WE ARE CURRENTLY AT THE PUBLIC AND AGENCY DRAFT EIS REVIEW STAGE. THIS PERIOD BEGAN WITH THE FEDERAL REGISTER PUBLICATION OF THE NOTICE OF AVAILABILITY FOR THE DRAFT EIS. AT THAT TIME, COPIES OF THE DRAFT EIS WERE MAILED TO LOCAL LIBRARIES, STATE AND FEDERAL REPRESENTATIVES AND INDIVIDUALS WHO REQUESTED COPIES DURING THE EIS SCOPING PERIOD.

THE NORMAL REVIEW PERIOD REQUIRED BY NEPA IS 45 DAYS. OUR DATE FOR COMPLETION OF THE PUBLIC COMMENT PERIOD IS DECEMBER 9, 2013. THE PUBLIC HEARINGS THIS WEEK ARE BEING HELD IN THE SAME COMMUNITIES AS THE PREVIOUS SCOPING MEETINGS IN ORDER TO PROVIDE THE AFFECTED COMMUNITIES WITH THE OPPORTUNITY TO COMMENT ON THE DRAFT EIS.

AFTER THE PUBLIC COMMENT PERIOD CLOSES, WE WILL REVIEW ALL COMMENTS RECEIVED AT THE PUBLIC HEARINGS, THROUGH THE MAIL, OR ELECTRONICALLY ON OUR WEB SITE, AND USE THEM TO PREPARE THE FINAL EIS. SUBSTANTIVE COMMENTS WILL BE REVIEWED AND RESPONDED TO IN THE FINAL EIS.

THE FINAL EIS IS SCHEDULED TO BE RELEASED IN MARCH 2014. AFTER THE FINAL EIS NOTICE OF AVAILABILITY IS PUBLISHED IN THE FEDERAL REGISTER, THE AIR FORCE MUST OBSERVE A WAITING PERIOD OF AT LEAST 30 DAYS BEFORE SIGNING THE FINAL RECORD OF DECISION (ROD) TO DOCUMENT WHICH ALTERNATIVE THE AIR FORCE SELECTS FOR IMPLEMENTATION.


**Environmental Resource  
Areas Addressed in the EIS**


- **Aircraft Operations**
  - Noise
  - Air Quality
  - Safety: Flight Safety, Ground Safety
- **Natural Resources**
  - Biological Resources
  - Soils and Water
- **Cultural Resources**
  - Archaeological, Architectural & Tribal and Traditional Resources
- **Human Resources**
  - Land Use
  - Socioeconomics
  - Environmental Justice & Protection of Children
- **Community Infrastructure**
  - Infrastructure (Utilities, Public Services, Transportation)
  - Hazardous Materials & Waste

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THE NEXT SET OF SLIDES DESCRIBES THE POTENTIAL ENVIRONMENTAL CONSEQUENCES AT EACH OF THE FOUR BASES. FOR THE PURPOSES OF THIS PRESENTATION, THE POTENTIAL ENVIRONMENTAL CONSEQUENCES AT EACH BASE HAVE BEEN SUMMARIZED IN BROAD TERMS. FOR A MORE DETAILED EVALUATION OF THE POTENTIAL CONSEQUENCES, PLEASE REFER TO CHAPTER 4 OF THE DRAFT EIS.

**Potential Environmental Consequences: Altus AFB FTU**

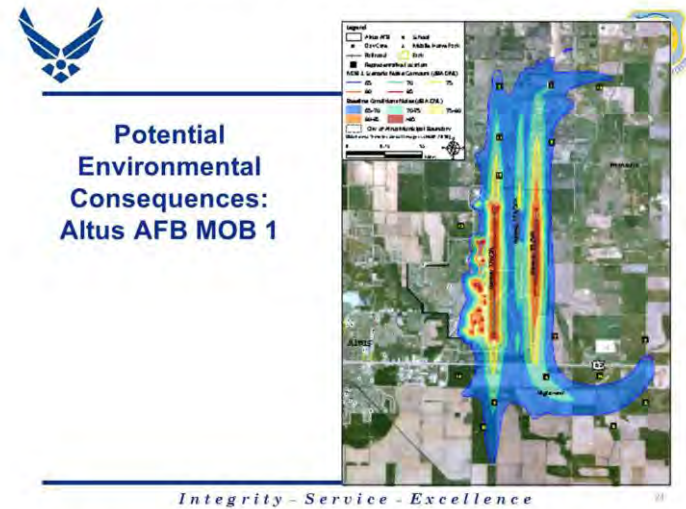
*Integrity - S*

IMPLEMENTATION OF THE FTU MISSION WOULD ADD UP TO 578 FULL TIME MILITARY, DEPENDENTS, AND STUDENTS TO JACKSON COUNTY RESULTING IN A 2.2 PERCENT INCREASE IN THE COUNTY POPULATION.

### A.7.2.3 Presentation and Script (Continued)

A VARIETY OF DEMOLITION, CONSTRUCTION AND RENOVATION PROJECTS WOULD BE REQUIRED FOR THE FTU MISSION RESULTING IN POSITIVE ECONOMIC IMPACTS TO JACKSON COUNTY AND SURROUNDING AREAS

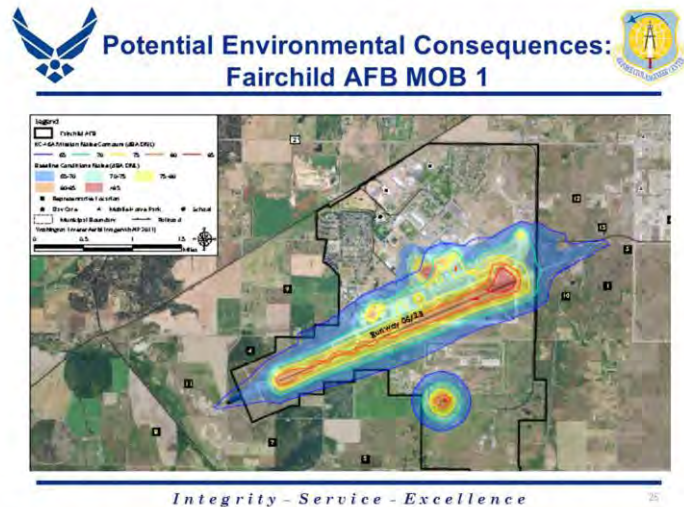
#### SLIDE 24. DESCRIPTION OF ANTICIPATED ENVIRONMENTAL CONSEQUENCES (Altus MOB 1)



IMPLEMENTATION OF THE MOB 1 MISSION AT ALTUS WOULD EXPOSE AN ADDITIONAL 155 ACRES OF OFF-BASE LAND AND AN ESTIMATED 6 ADDITIONAL OFF-BASE RESIDENTS TO NOISE LEVELS 65 DECIBELS OR GREATER. BECAUSE THREE SQUADRONS ARE REQUIRED FOR THE MOB 1 MISSION, SUBSTANTIALLY MORE CONSTRUCTION, DEMOLITION AND RENOVATION WOULD BE REQUIRED. MOST NOTABLE IS THE CONSTRUCTION OF THE NEW RAMP AND APRON AREA FOR PARKING 15 ADDITIONAL AIRCRAFT. IMPLEMENTATION OF THE MOB 1 MISSION WOULD ADD UP TO 4,917 FULL TIME MILITARY AND DEPENDENTS TO JACKSON COUNTY RESULTING IN AN 18.6 PERCENT INCREASE IN THE COUNTY POPULATION. AN INCREASE OF THIS MAGNITUDE COULD RESULT IN TRAFFIC CONGESTION NEAR THE BASE AND PLACE ADDITIONAL STRAIN ON BASE INFRASTRUCTURE. NO OTHER RESOURCE AREAS ARE ANTICIPATED TO BE IMPACTED BY THE MOB 1 MISSION.

### A.7.2.3 Presentation and Script (Continued)

#### SLIDE 25. DESCRIPTION OF ANTICIPATED ENVIRONMENTAL CONSEQUENCES (FAIRCHILD MOB 1)



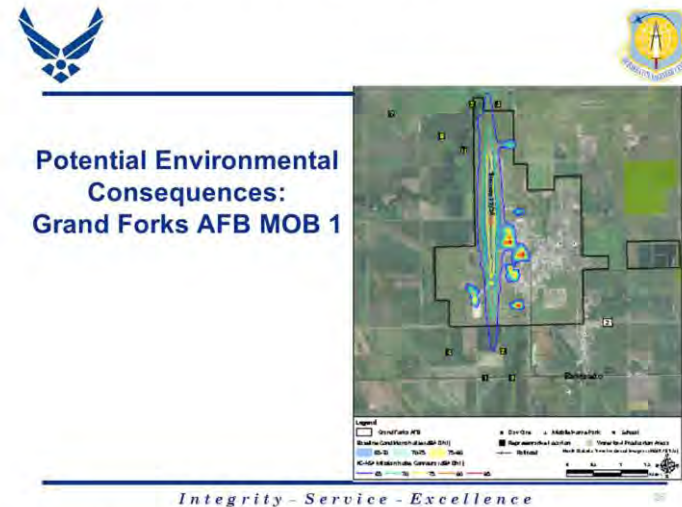
IMPLEMENTATION OF THE MOB 1 MISSION AT FAIRCHILD AIR FORCE BASE WOULD EXPOSE AN ADDITIONAL 53 ACRES OF OFF-BASE LAND AND AN ESTIMATED 2 OFF-BASE RESIDENTS TO NOISE LEVELS 65 DECIBELS OR GREATER.

IMPLEMENTATION OF THE MOB 1 MISSION WOULD ADD UP TO 1,095 FULL TIME MILITARY AND DEPENDENTS TO SPOKANE COUNTY RESULTING IN A 0.2 PERCENT INCREASE IN THE COUNTY POPULATION.

ONE HISTORIC BUILDING, HANGAR 2050, COULD BE ADVERSELY AFFECTED BY THE IMPLEMENTATION OF THE MOB 1 MISSION. CONSULTATION WITH THE WASHINGTON SHPO HAS BEEN INITIATED AND WOULD BE COMPLETED IF FAIRCHILD AIR FORCE BASE IS SELECTED TO HOST THE MOB 1 MISSION.

NO OTHER CONSEQUENCES ARE ANTICIPATED FOR THE MOB 1 MISSION AT FAIRCHILD AIR FORCE BASE.

#### SLIDE 26. DESCRIPTION OF ANTICIPATED ENVIRONMENTAL CONSEQUENCES (GRAND FORKS MOB 1)



IMPLEMENTATION OF THE MOB 1 MISSION AT GRAND FORKS AIR FORCE BASE WOULD EXPOSE AN ADDITIONAL 62 ACRES OF OFF-BASE LAND. NO OFF-BASE RESIDENTS WOULD BE EXPOSED TO NOISE LEVELS 65 DECIBELS OR GREATER.

THE KC-46A PARKING PLAN WAS SPECIFICALLY DESIGNED TO MINIMIZE CONFLICTS WITH THE EXISTING RPA MISSIONS. IN ADDITION, THE FAA REQUIRES THAT AIR TRAFFIC CONTROL DECONFLICTION OF REMOTELY PILOTED AIRCRAFT AND MANNED AIRCRAFT OPERATING IN CLASS D AIRSPACE AROUND GRAND FORKS AIR FORCE BASE.

APPROXIMATELY 2 ACRES OF POTENTIAL WETLANDS COULD BE IMPACTED BY THE PROPOSED ACTION. SHOULD GRAND FORKS AIR FORCE BASE BE SELECTED TO HOST THE MOB 1 MISSION, THE AIR FORCE WOULD WORK WITH THE U.S. ARMY CORPS OF ENGINEERS AND THE ND STATE WATER

## A.7-81

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*Final*

A.7-81

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*Final*

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*Final*



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*Final*

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*Final*

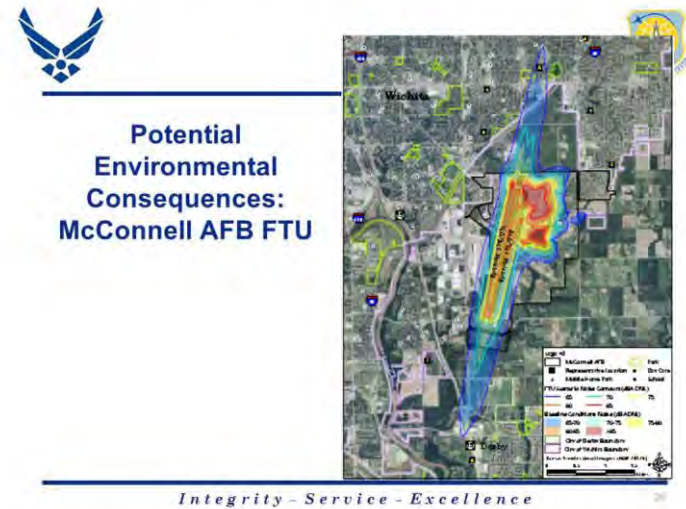
### A.7.2.3 Presentation and Script (Continued)

CONSTRUCTION DESIGNS WOULD INCORPORATE MEASURES FOR CONSTRUCTION IN THE FLOODPLAIN.

IMPLEMENTATION OF THE MOB 1 MISSION WOULD RESULT IN A SLIGHT 0.1 PERCENT DECREASE OF 291 FULL TIME MILITARY AND DEPENDENTS TO SEDGWICK COUNTY. THIS DECREASE IS NOT ANTICIPATED TO NEGATIVELY AFFECT SEDGWICK COUNTY.

NO OTHER RESOURCE AREAS ARE ANTICIPATED TO BE IMPACTED BY THE MOB 1 MISSION.

#### SLIDE 28. DESCRIPTION OF ANTICIPATED ENVIRONMENTAL CONSEQUENCES (MCCONNELL FTU)



IMPLEMENTATION OF THE FTU MISSION AT MCCONNELL AIR FORCE BASE WOULD INCREASE THE NUMBER OF ACRES (273) AND PEOPLE (594) EXPOSED TO NOISE LEVELS 65 DECIBELS OR GREATER. THE INCREASE IN NOISE LEVELS IS PRIMARILY ATTRIBUTED TO THE ADDITION OF UP TO 8 ADDITIONAL AIRCRAFT ON TOP OF THE EXISTING KC-135 MISSION. THE ADDITIONAL ACRES AFFECTED BY NOISE ARE PRIMARILY LOCATED DIRECTLY TO THE NORTH AND SOUTH OF THE TWO RUNWAYS.

A LESSER AMOUNT OF CONSTRUCTION, DEMOLITION AND RENOVATION WOULD BE REQUIRED TO IMPLEMENT THE FTU MISSION AND NO HISTORIC STRUCTURES WOULD BE AFFECTED.

IMPLEMENTATION OF THE FTU MISSION WOULD RESULT IN A SLIGHT 0.2 PERCENT INCREASE OF 570 FULL TIME MILITARY, DEPENDENTS, AND STUDENTS TO SEDGWICK COUNTY.

### A.7.2.3 Presentation and Script (Continued)

NO OTHER RESOURCE AREAS ARE ANTICIPATED TO BE IMPACTED BY THE FTU MISSION.

THIS CONCLUDES MY PORTION OF THIS PRESENTATION, AND I THANK YOU FOR YOUR ATTENTION.

I WILL NOW TURN THE FLOOR BACK TO LT COL RICHARDSON WHO WILL PROVIDE YOU WITH INFORMATION ON THE SECOND PART OF TONIGHT'S HEARING, THE PUBLIC COMMENT PERIOD.

SPEAKER: HEARING OFFICER (LT COL RICHARDSON)

HEARING OFFICER SCRIPT – PART 2

**POSSIBLY INSERT A SHORT BREAK HERE.**

#### SLIDE 29. (PUBLIC HEARING PROCEDURES)



### Public Hearing Procedures



- Sign up on a speaker form
- Clearly state and spell your name and affiliation, if any
- All oral comments will be transcribed and included in the EIS
- Please limit comments to 3 minutes.
  - A yellow card will be raised when you have only 30 seconds remaining, and a red card when your time is up



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*Integrity - Service - Excellence*

WE'LL NOW MOVE INTO THE PUBLIC COMMENT PART OF THE HEARING. FOR THOSE WISHING TO SPEAK, HERE IS THE FORMAT. PLEASE FILL OUT A WHITE SPEAKER FORM. IF YOU DID NOT GET ONE OF THESE AND WANT TO SPEAK, PLEASE RAISE YOUR HAND AND ONE OF THE STAFF WILL GIVE YOU A FORM.

I WILL CALL YOU BY NAME AND YOU MAY APPROACH THE MICROPHONE, HERE. TO HELP OUR STENOGRAPHER, PLEASE BEGIN BY STATING YOUR NAME AND THE NAME OF THE ORGANIZATION, IF ANY, THAT YOU REPRESENT. IT WILL ALSO HELP IF YOU SPELL YOUR LAST NAME. PLEASE DO NOT PROVIDE ANY OTHER PERSONAL INFORMATION SUCH AS YOUR HOME ADDRESS OR PHONE NUMBER. AGAIN, YOUR COMMENTS ARE RECORDED VERBATIM. THEY WILL BE USED TO DEVELOP A TRANSCRIPT AND PERMANENT RECORD OF THIS MEETING, AND WILL BE PUBLISHED IN THE FINAL EIS. YOUR NAME WILL BE INCLUDED ALONG WITH YOUR

### A.7.2.3 Presentation and Script (Continued)

COMMENTS. PERSONAL HOME ADDRESSES AND PHONE NUMBERS WILL NOT BE PUBLISHED IN THE FINAL EIS.

EACH SPEAKER WILL HAVE THREE MINUTES TO PROVIDE HIS OR HER ORAL COMMENTS ON THE PROPOSED ACTION AND ALTERNATIVES.

WE HAVE A TIMEKEEPER TO HELP KEEP TRACK OF THE TIME. (NAME OF TIME CARD HOLDER) THIS PERSON WILL HOLD UP A YELLOW CARD WHEN YOU HAVE ABOUT 30 SECONDS LEFT AND A RED CARD WHEN TIME IS UP. AT THAT TIME, PLEASE CONCLUDE YOUR COMMENTS AT THAT POINT SO I CAN CALL ON THE NEXT PERSON. OF COURSE, THERE IS NO OBLIGATION TO USE THE ENTIRE THREE MINUTES. YOU DO NOT NEED TO YIELD ANY REMAINING TIME TO SOMEONE ELSE; I WILL JUST MOVE ON TO THE NEXT SPEAKER WHEN YOU'VE FINISHED. ALSO, IN THE INTEREST OF TIME, WE ASK THAT YOU SUBMIT ANY INDIVIDUAL ELECTRONIC PRESENTATIONS AS WRITTEN COMMENTS.

TONIGHT'S HEARING IS SET TO END AT 8 PM. IF EVERYONE WHO SIGNED UP TO SPEAK HAS HAD A CHANCE TO DO SO BEFORE THAT TIME, I WILL ASK IF ANY SPEAKER WOULD LIKE ANOTHER THREE MINUTES TO EXPAND ON YOUR COMMENTS. IF YOU WANT TO DO THAT, JUST LET ME KNOW AND WE'LL PUT ANOTHER THREE MINUTES BACK ON THE CLOCK FOR YOU.

#### SLIDE 30. (WRITTEN COMMENTS)



### Written Comments



- All comments will be included in the EIS
- Complete and turn in comments tonight
- Submit on the internet at: [www.KC-46a-beddown.com](http://www.KC-46a-beddown.com)
- Mail to:  
Ms. Jean Reynolds  
AFCEC/CZN Bldg. 171  
2261 Hughes Av. Suite 155  
Lackland, AFB TX 78236
- Public Comment Period Ends: December 9, 2013

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*Integrity - Service - Excellence*

IF YOU WANT TO ADD SOMETHING LATER TO YOUR ORAL COMMENTS OR IF YOU WOULD RATHER NOT SPEAK HERE TONIGHT, YOU CAN SUBMIT WRITTEN COMMENTS. THERE IS NO PAGE LIMIT ON WRITTEN COMMENTS, AND THE AIR FORCE GIVES EQUAL WEIGHT TO ORAL AND WRITTEN COMMENTS. BOTH BECOME PART OF THE OFFICIAL RECORD AND ARE INCLUDED IN THE FINAL EIS.

JUST A FEW REMINDERS BEFORE WE GET STARTED. FIRST, PLEASE LIMIT YOUR COMMENTS TO THE ANALYSIS IN THE DRAFT EIS. THAT IS THE PURPOSE OF THIS PUBLIC COMMENT PERIOD. AS I MENTIONED EARLIER, THIS IS NOT A Q&A SESSION – IT'S AN OPPORTUNITY FOR YOU TO PUT ON THE RECORD YOUR VIEWS AND CONCERNS ABOUT THE PROPOSAL THAT YOU WANT THE DECISION MAKERS TO CONSIDER. QUESTIONS THAT YOU POSE DURING YOUR VERBAL TESTIMONY WILL BECOME PART OF THE RECORD AND WILL BE CONSIDERED. AFTER WE'VE COMPLETED THE

### A.7.2.3 *Presentation and Script (Continued)*

FORMAL PART OF THIS HEARING, AIR FORCE REPRESENTATIVES WILL CONTINUE TO BE AVAILABLE FOR DISCUSSION.

I HAVE BEEN PROVIDED A LIST OF INDIVIDUALS WHO WOULD LIKE TO SPEAK. WE WILL FIRST INVITE ELECTED OFFICIALS TO SPEAK FOLLOWED BY OTHERS AS WE HAVE RECEIVED THEIR SPEAKER CARDS.

OUR FIRST SPEAKER IS: \_\_\_\_\_

PLEASE APPROACH THE TABLE, STATE AND SPELL YOUR NAME, AND INDICATE YOUR AFFILIATION IF ANY, FOR THE RECORD.

[IF PUBLIC COMMENT CONCLUDES BEFORE 8 PM]

AS I MENTIONED, THE HEARING IS SCHEDULED TO END AT 8 PM. WE'VE HEARD FROM EVERYONE WHO SIGNED UP TO SPEAK AND STILL HAVE SOME TIME LEFT. PLEASE RAISE YOUR HAND IF YOU HAVE NOT SPOKEN YET BUT WOULD LIKE TO DO SO AND WE'LL GET YOU A CARD. [CALL FIRST THOSE WHO WANT TO SPEAK FOR THE FIRST TIME.]

IS THERE ANYONE WHO HAS ALREADY SPOKEN WHO WOULD LIKE ANOTHER THREE MINUTES? **[USE THREE-MINUTE BLOCKS UNTIL THE HEARING TIME EXPIRES. GO TO ALTERNATIVE 2 BELOW IF TIME RUNS OUT BEFORE EVERYONE HAS SPOKEN.]**

WE HAVE NO REMAINING SPEAKERS. AS I MENTIONED EARLIER, AIR FORCE REPRESENTATIVES WILL CONTINUE TO BE AVAILABLE OUT BY THE DISPLAY BOARDS TO CONTINUE DISCUSSIONS. HOWEVER, DISCUSSIONS THAT TAKE PLACE AT THE BOARDS WILL NOT BE PART OF THE OFFICIAL RECORD OF THIS EIS.

[IF THE HEARING WILL ADJOURN BEFORE EVERYONE WHO WANTS TO SPEAK HAS SPOKEN]

I APOLOGIZE THAT TIME HAS RUN OUT BEFORE SOME OF YOU HAD AN OPPORTUNITY TO SPEAK. PLEASE SUBMIT YOUR COMMENTS IN WRITING EITHER TONIGHT OR VIA THE WEBSITE AT [WWW.KC-46A-BEDDOWN.COM](http://WWW.KC-46A-BEDDOWN.COM). YOU CAN ALSO MAIL COMMENTS TO THE ADDRESS SHOWN ON THIS SLIDE.

KC 46-A Beddown Draft Public Hearing Script

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2013-10-30

AGAIN, ORAL AND WRITTEN COMMENTS RECEIVE EQUAL WEIGHT.

IN ADDITION, THE AIR FORCE WILL CONSIDER YOUR COMMENTS NO MATTER WHEN YOU SEND THEM TO THE EXTENT POSSIBLE. HOWEVER, THEY MUST CONSIDER ALL COMMENTS RECEIVED BEFORE THE CLOSE OF THE PUBLIC COMMENT PERIOD, WHICH IS DECEMBER 9, 2013.

KC 46-A Beddown Draft Public Hearing Script

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2013-10-30

A.7.2.3 *Presentation and Script (Continued)*

SLIDE 31. (FINAL)



I THANK YOU FOR YOUR TIME AND INTEREST. TONIGHT IS NOT THE END OF YOUR OPPORTUNITY TO PARTICIPATE IN THE ENVIRONMENTAL REVIEW PROCESS. AGAIN, WRITTEN COMMENT SHEETS ARE AVAILABLE AT THE REGISTRATION TABLE. YOU CAN TURN THESE SHEETS IN TONIGHT OR MAIL THEM LATER.

IF YOU WOULD LIKE YOUR OWN COPY OF THE FINAL EIS, PLEASE LET ONE OF THE REPRESENTATIVES AT THE REGISTRATION TABLE KNOW OR SEND A LETTER OR POSTCARD ASKING FOR YOUR OWN COPY. THE AIR FORCE WILL SEND COPIES OF THE FINAL EIS TO YOU.

RECESS/ADJOURN:

[IF BEFORE 8 PM] THIS HEARING IS IN RECESS. THANK YOU. [GO BACK ON THE RECORD AT 8 PM AND STATE:] THERE BEING NO MORE SPEAKERS, THIS HEARING IS ADJOURNED. [IF HEARING ENDS AT 8 PM (OR LATER)] THIS HEARING IS ADJOURNED.

## A.7.3 Draft EIS Comments, Public Hearing Sign-In Sheets and Transcripts

## A.7.3.1 Altus AFB Draft EIS Comments

A\_001\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: Altus DATE: 11/14/13

The Air Force has been a wonderful steward of the property they own + wonderful neighbors and members of our community. We look forward to having the KC-46A aircraft added to those already in place here.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: K. Renee Collingsworth

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A\_002\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: Altus, Oklahoma DATE: 14 Nov 13

I'm all for this new aircraft. As an Retired crewmember of the KC-135A with over 3000 hours in the 1955 version of the aircraft. I say it's about time the Air Force has a modern tanker aircraft. It will be efficient in more fuel burn an saving other ways. I also think the time on cost of these studies are a waste of american tax dollars. When a new modern aircraft is introduced and it has less impact of the previous aircraft which has already had an EIS its not necessary for another study. Back page

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: MITCH DABYCH

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.1 Altus AFB Draft EIS Comments (Continued)

A\_003\_D\_1

Continuation Page

A\_002\_D\_1

Number one if one makes the DOD mad, Altus could lose the Air Force Base, a wrong move since Altus has the most training days anywhere in the United States. It holds all the income from the Air Force Base could turn Altus into a lesser city. If so I would have to move my residence to a place closer to an existing Air Base for medical reasons. Since I am retired Air Force my family for necessary medical care. So get on with the Beddown at Altus Air Force Base.

*Mild Warner*

Thank you for your input.

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: *Southwest Technology* DATE: *11/14/12*

*Altus, OK*

*Thank you*

*for your service*

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: *Connie Hall*

Organization:

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

### A.7.3.1 Altus AFB Draft EIS Comments (Continued)

#### A\_004\_D\_O

*\*Joe Leverett provided verbal comment at the Altus Public Hearing 11/14/13, comment received via transcript from court reporter.*

My name is Joe Leverett,

16 L-E-V-E-R-E-T-T. I am Chairman of the Altus Military  
17 Affairs committee.

18 And only behalf of the Military Affairs  
19 Committee, we are excited that you're here. We're  
20 excited that Altus is considered the beddown for the  
21 KC-46A FTU.

22 I know at McConnell Air Force Base, there  
23 were quite a few more politicians that spoke. We  
24 elected to maintain the integrity of the process by  
25 not putting undue political pressure on you, Colonel  
1 Richardson.

2 So we are excited about the FTU. Altus is  
3 the most logical base for the beddown of the KC-46A,  
4 co-location of the C-17 and the KC-135 make it the  
5 perfect training environment. We have a national  
6 treasurer in our aerospace, the proximity to our  
7 refueling tracts, and we're excited about the  
8 process.

9 Centralized training has been a mainstay of  
10 the Air Force. We, here, feel that that's the best  
11 process, continue to train tankers and air lifters.  
12 So we're excited about you coming.

13 The Military Affairs Committee, the Chamber,  
14 the City of Altus will do everything we can to make  
15 sure that this beddown goes smoothly. And, remember,  
16 Altus is a community that has great airspace, ramp  
17 space and a community that loves the Air Force.

18 Thank you.

#### A\_005\_D\_A

*\*Mike Schulz provided verbal comment at the Altus Public Hearing 11/14/13, comment received via transcript from court reporter.*

Mike Schulz, S-C-H-U-L-Z,

16 Majority Floor Leader, Oklahoma State Senate.

17 It's a little concerning that, ma'am, you  
18 just said you're not going to hold us for three  
19 minutes and then you start off with a politician.

20 These comments will be very brief. On  
21 behalf of the State of Oklahoma and on behalf of  
22 certainly Southwest Oklahoma, only behalf of  
23 Representative Charles Ortega and myself, we'd like  
24 to thank you all for being here tonight. Thank you  
25 for your work thus far in this project. And

1 certainly anything that the State of Oklahoma can do  
2 to further this project, you certainly have our full  
3 support.

4 We're excited about the opportunity to  
5 utilize the assets, not only at Altus Air Force Base,  
6 but also at Clinton-Industrial Air Park, as well,  
7 both of which are tremendous assets for the Air Force  
8 and for the State of Oklahoma. We're certainly glad  
9 you all are here tonight.

10 Thank you.

A.7.3.1 Altus AFB Draft EIS Comments (Continued)



IN REPLY REFER TO:  
NATURAL RESOURCES (405) 247-6673

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS  
SOUTHERN PLAINS REGION  
BRANCH OF NATURAL RESOURCES  
P.O. BOX 368  
ANADARKO, OKLAHOMA 73005

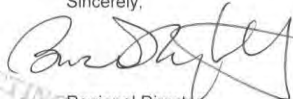
Ms. Jean Reynolds  
2261 Hughes Ave., Suite 155  
JB SA Lackland, TX 78236-9853

Dear Ms. Reynolds:

Thank you for the opportunity to review the draft Environmental Impact Statement (EIS) for the proposed KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). We have reviewed the draft EIS, as well as the maps and supporting information, and have determined that there are no tribal or Individual Indian trust lands under the jurisdiction of the Southern Plains Region within the study area of the draft EIS.

If any additional information or clarification is needed, please contact David Anderson, Regional Environmental Scientist, at [REDACTED]

Sincerely,

  
ACTING Regional Director

A\_006\_D\_A



ER 13/681  
File 9043.1

United States Department of the Interior

OFFICE OF THE SECRETARY  
Office of Environmental Policy and Compliance  
1001 Indian School Road NW, Suite 348  
Albuquerque, New Mexico 87104



A\_007\_D\_A

December 3, 2013

VIA ELECTRONIC MAIL ONLY

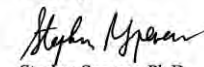
Jean Reynolds  
AFCEC/CZN, Bldg 171  
2261 Hughes Ave., Suite 155  
Lackland AFB, TX 78236-9853

Dear Ms. Reynolds:

The U.S. Department of the Interior has reviewed the Draft Environmental Impact Statement for the KC-46A Formal Training Unit and First Main Operating Base (MOB 1) Beddown, Oklahoma. In this regard, we have no comment.

Thank you for the opportunity to review this document.

Sincerely,

  
Stephen Spencer, Ph.D.  
Regional Environmental Officer

A.7.3.1 Altus AFB Draft EIS Comments (Continued)



NOV 19 2013

J. Dale Clark  
Chief, Air Force NEPA Center  
2261 Hughes Avenue, Suite 155  
JBSA Lackland, TX 78236-9853

Dear Mr. Clark:

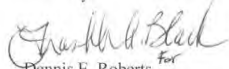
Thank you for your September 26 letter referencing the Draft Environmental Impact Statement for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown.

The Federal Aviation Administration (FAA) Airspace Services (AJV-1) has reviewed the KC-46A FTU and MOB 1 Draft Environmental Impact Statement and determined that the federal action described within the document does not involve changes in airspace or involve FAA action regarding airspace management. As such, AJV-1 has no comment.

AJV-1 has forwarded the link to the EIS website (<http://www.kc-46a-beddown.com/index.aspx>) which contains electronic copies of the document to the appropriate Air Traffic Organization Service Centers for their review. All comments will be provided electronically through the EIS website before the public comment period ends on December 9, 2012.

Thank you for providing this document to AJV-1 and we look forward to working with all of our Department of Defense partners in managing the National Airspace System.

Sincerely,

  
Dennis E. Roberts  
Director, Airspace Services  
Air Traffic Organization

A\_008\_D\_A



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

A\_009\_D\_A

DEC 6

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Ms. Jean Reynolds  
USAF AFCEC/CZN  
2261 Hughes Avenue, Suite 155  
JBSA Lackland AFB, TX 78236-9853

Dear Ms. Reynolds:

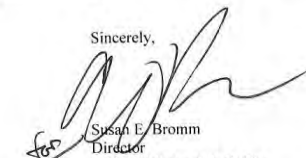
In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Department of the Air Force's draft Environmental Impact Statement (EIS) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown (CEQ No. 20130301).

The draft EIS addressed the potential environmental effects of establishing a KC-46A FTU to train crew and support personnel to operate the KC-46A aircraft and the MOB 1 to provide a combat operational KC-46A aerial refueling force. The KC-46A aerial refueling aircraft will replace a portion of the aging fleet of KC-135 Stratotankers. The U.S. Air Force identified Altus Air Force Base (AFB) as the preferred alternative for the FTU scenario and McConnell AFB as the preferred alternative for the MOB 1 scenario. Altus AFB includes the beddown of one FTU squadron by Air Education and Training Command with up to eight KC-46A aircraft. McConnell AFB would be the beddown of three squadrons by the Air Mobility Command with 36 KC-46A aircraft.

EPA believes that the draft EIS provides an adequate discussion of the potential environmental impacts and we have not identified any potential environmental impacts requiring substantive changes. EPA has rated the draft EIS as LO – "Lack of Objections." A summary of EPA's rating is enclosed.

We appreciate the opportunity to review the draft EIS. The staff contact for the review is Candi Schaedle and she can be reached at [REDACTED]

Sincerely,

  
Susan E. Bromm  
Director  
Office of Federal Activities

Enclosure

Internet Address (URL) • <http://www.epa.gov>  
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Postconsumer Processed Chlorine Free Recycled Paper

### A.7.3.1 Altus AFB Draft EIS Comments (Continued)

A\_009\_D\_A

#### SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\*

##### Environmental Impact of the Action

###### LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

###### EC-Environmental Concerns

The EPA review has identified significant environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

###### EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

###### EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS state, this proposal will be recommended for referral to the CEQ.

##### Adequacy of the Impact Statement

###### Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

###### Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

###### Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\* From EPA Manual (640) Policy and Procedures for the Review of the Federal Actions Impacting the Environment

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets



LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Kerr	Roger	SWTech			<input type="checkbox"/> I will download <input type="checkbox"/> CD
NORRIS	JAMES	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
LEVITT	JOE	MAZ			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Ragan	NATHAN	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
LevereTT	Daniel	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
McLaughlin	Larry	SELF -			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Nichols	Rodney	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Urbanowski	Holley	Altus Chamber			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD



LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MOORE	Tom	SELF			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Gover	JAMES	SELF			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
MARTIN	KEVIN	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
HALL	HOWARD	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Collingswood	K. Renee	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Darby	Dana	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Vincent Thomas		self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Boon	William	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets (Continued)

3

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
BILLS	CARL	MILITARY AFFAIRS COMMITTEE			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Kelly	Jim	Self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Blacklock	DAVID	Self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Greenlee	Jeff	NBL Bank		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Stoen	Rick	City of Altus Military Affairs		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Willingham	Candace	MAC		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Patterson	M. L.	City Council		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Mike Scholz	Mike	State Senate		<input type="checkbox"/> I will download <input type="checkbox"/> CD	

4

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_


Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
James Bellon		97CES/CENAP			<input type="checkbox"/> I will download <input type="checkbox"/> CD
DARVELL	MITCH	A.F. Retired		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
JASON ANGUS	-	Altus Time		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Tom Fisher	Tom	Wayland Bapt. Univ.		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
THOMAS	John			<input type="checkbox"/> I will download <input type="checkbox"/> CD	
REED	RYAN	MIA		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
WINTERS	BRIAN	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Holcombe	Helen	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets (Continued)

5

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Butcher	Chuck	Altus AFB			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Thompson	Buddy	Thompson Farms			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

6

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
SMITH	NUB	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Bobo	Dottie	"			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Leverett	Kim	"			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Smith	Cyndie	"			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Dartall	Denny	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

8



Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_


Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Latham	Dale	Southwest Tech.			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hill	Roger	Altus Public Schools			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Colston	Lloyd	Altus Em			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Thompson	Diana	SWTC			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Anderson	Tanya	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Casins	Jodi	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets (Continued)

9

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Knight	Carlene	Self	[REDACTED ADDRESS]	[REDACTED EMAIL]	<input type="checkbox"/> I will download <input type="checkbox"/> CD
Gurleson	Barbara	City of Altus			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Pappo	Larjie	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Tanner	Janel	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Fortuna	BONNIE	my family & myself			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

10

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**



LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Creager	Bryan		[REDACTED ADDRESS]	[REDACTED EMAIL]	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
HUEY	DAVID	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.2 Altus AFB Public Hearing Sign-In Sheets (Continued)

11

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Peterson	Brian	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Skinner	Robert	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Dykens	Diane	CENTURY 21			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Willey	Brett	JCMH/MAC			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Martin	Wm. Chas	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Farr	Cassie	SWTC			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

12

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown

LOCATION: \_\_\_\_\_ WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: \_\_\_\_\_

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. **PLEASE PRINT CLEARLY.**

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hartsell	Henry	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
		would like paper copy of final EIS			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

### A.7.3.3 Altus AFB Public Hearing Transcript

13.11.14. Altus transcript.txt

0001  
1 PUBLIC HEARING FOR THE  
2 ENVIRONMENTAL IMPACT STATEMENT  
3 FOR THE FORMAL TRAINING UNIT (FTU) AND  
4 MAIN OPERATING BASE 1 (MOB 1)  
5 FOR THE BEDDOWN OF KC-46A TANKER AIRCRAFT  
6 HELD IN ALTUS, OKLAHOMA  
7 ON NOVEMBER 14, 2013  
8  
9  
10  
11  
12  
13 HEARING OFFICER: LIEUTENANT COLONEL NATALIE RICHARDSON  
14 TEAM MEMBERS:  
15 COLONEL TODD CARGLE, AMC A5/A8P  
16 DALE CLARK, AFCEC/CZN  
17  
18  
19  
20  
21  
22 REPORTED BY: JUDY THOMPSON, CSR  
23  
24 CITY REPORTERS  
25 117 PARK AVENUE  
OKLAHOMA CITY, OKLAHOMA 73102  
(405) 235-3376

0002  
1 (Hearing commenced at 5:30 p.m.)  
2 LIEUTENANT COLONEL RICHARDSON: Good  
3 evening.  
4 I see you have all taken your seats already.  
5 What I would like to ask is if you have a  
6 cell phone or other electronic device, please set it  
7 to vibrate or otherwise silence it at this time.  
8 You may have been talking to some of the  
9 representatives before we started up. And we will be  
10 taking a break before the public comment period where  
11 you may have another opportunity to talk with them.  
12 And at the end, time permitting, you will have yet  
13 another opportunity to talk with the representatives.  
14 Before I continue, I would like to introduce  
15 the commander of the 97th Air Mobility Wing, Colonel  
16 Bill Spangenthal.  
17 MR. SPANGENTHAL: I'll be very brief. I  
18 just want to thank you all for attending tonight.  
19 It's an important event, this Public Hearing, to talk  
20 about the environmental impact of the KC-46.  
21 I also want to thank Southwestern for  
22 letting us be here, the gracious host for all the  
23 folks on this side that helped make this possible.  
24 I think we'll give you quite a bit of good  
25 information. And, as we discussed, there will be  
0003  
1 some good opportunities to provide some feedback.  
2 So without further ado, let's continue on.  
3 Thank you very much.  
4 LIEUTENANT COLONEL RICHARDSON: Thank you,  
5 sir.  
6 The time is 5:30 p.m. and we will now start  
7 the hearing.

Page 1

13.11.14. Altus transcript.txt

8 Thank you for attending.  
9 This Public Hearing for the Draft  
10 Environmental Impact Statement or Draft EIS for the  
11 proposed formal training unit and first main  
12 operating base beddown of the KC-46A tanker aircraft.  
13 I am Lieutenant Colonel Natalie Richardson,  
14 and I'll be your Hearing Officer tonight. I am an  
15 Air Force Judge and will be acting as the moderator  
16 tonight.  
17 As the moderator, my role is to ensure that  
18 the Air Force provides a fair, orderly and impartial  
19 hearing where you have the opportunity to make  
20 comments on the proposal.  
21 I do not work for anyone at Air Mobility  
22 Command, the Air Force Civil Engineer Center, Air  
23 Education and Training Command or any of the Air  
24 Force bases under consideration for the proposed  
25 action.  
0004  
1 I'm not involved in any way with the  
2 development of this Draft EIS, and I do not act as a  
3 legal advisor to the Air Force representatives  
4 working on this proposal.  
5 This Hearing is held in accordance with the  
6 provisions of the National Environmental Policy Act,  
7 or "NEPA," as implemented by the Counsel on  
8 Environmental Quality Regulations and the Air Force.  
9 We are here tonight to present information  
10 on the environmental impacts of the proposed KC-46A  
11 beddown and to take your comments on the Draft EIS.  
12 Tonight's Hearing is one of several  
13 opportunities for public comments. This Hearing is  
14 an opportunity for you to express your views and  
15 concerns about the adequacy of the environment  
16 analysis contained in the Draft EIS, as well as any  
17 issues related to the National Environmental Policy  
18 Act process.  
19 This Hearing is not a debate or a vote on  
20 the draft EIS, and it is not a question and answer  
21 session. We welcome your input on the environmental  
22 analysis presented in the Draft EIS.  
23 Comments about other unrelated issues can  
24 certainly be made, but they will not assist in the  
25 decision-making process for the Draft EIS.  
0005  
1 I would like to begin this Hearing by  
2 introducing the NEPA team, beginning with the Team  
3 Leader, Colonel Todd Cargle, with the Air Mobility  
4 command, who will present details of the proposed  
5 action and alternatives.  
6 Next is Mr. Dale Clark, Chief of the Air  
7 Force NEPA Center, who will discuss results of the  
8 NEPA process.  
9 Representatives from Altus Air Force Base  
10 led by Colonel Spangenthal are also present.  
11 Although not a part of the analysis team, they have  
12 provided detailed base information, which is critical  
13 to a thorough analysis of impacts in this Draft EIS.  
14 Lastly, representatives from Leidos are here  
15 supporting the Air Force as the contractor.  
16 Transcribing tonight's hearing is Ms. Judy  
17 Thompson.  
18 Colonel Cargle will first present  
Page 2

## A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
 information on the proposed actions and the  
 alternatives.  
 Then Mr. Clark will provide an overview of  
 the NEPA process and will summarize potential  
 environmental consequences of the proposal.  
 After their presentations, which should take  
 about 20 minutes, we are going to take a break. Over  
 the break, if you haven't already signed up to speak  
 and you would like to, you can do that over the  
 break.  
 I will plan to start up again at 6:15 for  
 the formal comment process.  
 During the oral comment period, you can  
 provide input on the proposed action, Draft EIS  
 analysis and potential environmental impacts. Your  
 comments will become part of the official record of  
 the Final EIS.  
 Please note that informal discussions at our  
 informational displays will not become part of the  
 EIS record. So if you have items of concern about  
 the analysis and the Draft EIS you would like to  
 bring to our attention, please do so during our  
 formal comment opportunity or in writing.  
 If you do not choose to make an oral  
 comment, you can send written comments either by  
 turning in a comment form this evening or by mailing  
 it to the address shown on the screen. Comments also  
 may be submitted on line at [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com).  
 If you have not had a chance to review the  
 Draft EIS, it is available on the website or at one  
 of the public libraries listed here.  
 The Air Force welcomes public comments in  
 writing at any time during the environmental impact  
 analysis process.  
 To receive timely consideration for the  
 Final EIS, please submit your comments by December 9,  
 2013. Your comments will provide the decision maker,  
 that's the Secretary of the Air Force, with  
 information to assist in making a decision regarding  
 where the formal training unit, or FTU, and first  
 Main Operating Base, or MOB 1, will be located.  
 Your comments during this process provide  
 the benefit of your knowledge of the local area and  
 your concerns about the environmental impacts or  
 analyses.  
 We will now move into the briefings. During  
 the briefings, our speakers will be reading from  
 prepared scripts. The briefings are written to make  
 certain each speaker covers all pertinent information  
 and is consistent with all four hearings.  
 With that, I will turn the mic over to  
 Colonel Cargle.  
 COLONEL CARGLE: Good evening and welcome.  
 I'm Colonel Todd Cargle. I currently serve as the  
 Chief of the Programs Division within the Plans,  
 Requirements and Programs Directorate and  
 Headquarters of Air Mobility Command, Scott Air  
 Force, Illinois.  
 I'm a Command Pilot with 4,000 hours of  
 experience, mobility aircraft, including being the  
 Page 3

13.11.14. Altus transcript.txt  
 instructor and an evaluator of the KC-135.  
 I have operated and led mobility forces in  
 all phases of a mission, including five combined  
 deployments to Afghanistan and Iraq.  
 With that said, welcome to this evening's  
 meeting.  
 As the team lead, I encourage you to assist  
 the Air Force in meeting its requirements to comply  
 with the NEPA process. Your attendance tonight  
 indicates your interest in this proposed action. And  
 I hope your comments will provide us with  
 improvements or areas where further analysis is  
 needed.  
 All comments will be properly reviewed,  
 analyzed and addressed in the Final EIS.  
 The purpose of the proposed action involves  
 the KC-46A's role in the Air Force tanker fleet  
 modernization effort. The goal of this effort is to  
 ensure future tankers are best available to support a  
 high-threat multi-role war fighting capability to  
 commanders worldwide.  
 To perform this mission, trained aircrews,  
 maintenance and support personnel must be available  
 to meet KC-46A inventory delivery dates as older  
 tanker aircraft are removed from the inventory.  
 While we will continue to operate the legacy  
 fleet of tanker aircraft, the KC-46A provides several  
 advantages, including:  
 \* Ability to refuel any fixed-wing certified  
 aircraft on any mission;  
 \* Capable of refueling multiple aircraft at  
 once;  
 \* Increased airlift capability;  
 \* Receiver air refueling; and improved force  
 protection and survivability.  
 The Air Force is proposing to establish an  
 FTU and the first MOB for KC-46A aircraft along with  
 required infrastructure and manpower at two active  
 duty Air Force bases in the continental United  
 States.  
 The FTU will train personnel to safely and  
 effectively fly and operate KC-46A aircraft. The  
 operational MOB 1 mission utilizes pilots, co-pilots,  
 boom operators and other support staff who operate  
 and maintain the aircraft to provide worldwide  
 refueling, cargo, or aero medical evacuation support.  
 The Action Alternative consists of two  
 parts. The first part is the KC46A FTU beddown,  
 which places up to eight KC-46A tanker aircraft for  
 one squadron at one base.  
 The second part of the Action Alternative is  
 the selection of the first KC-46A MOB. This action  
 places 36 KC-46A aircraft in three squadrons at one  
 base.  
 The No-Action Alternative is required by  
 NEPA and was evaluated at each proposed beddown  
 location to provide a baseline for decision-makers.  
 The No-Action Alternative evaluates the environmental  
 consequences of not basing the KC-46A aircraft at  
 any base.  
 In the Draft EIS, the Air Force analyzed the  
 Page 4

A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
 environmental consequences of basing the FTU at Altus  
 Air Force Base in Oklahoma or McConnell Air Force  
 Base in Kansas. The Air Force also analyzed the  
 environmental consequences of basing the MOB 1 at  
 Altus Air Force Base in Oklahoma, Fairchild Air Force  
 Bas in Washington, Grand Forks Air Force Base in  
 North Dakota or at McConnell Air Force Base in  
 Kansas.  
 In this action, no base would be selected to  
 host both the KC-46A FTU and MOB 1 missions.  
 In May of this Year, the Secretary of the  
 0011  
 Air Force announced Altus Air Force Bas as the  
 preferred alternative for the KC-46A FTU.  
 McConnell Air Force Base was selected as the  
 preferred alternative for the first KC-46A Main  
 Operating Base. Fairchild and Grand Forks were  
 announced as reasonable alternatives for the MOB 1.  
 This table summarizes the bases being considered for  
 each KC-46A Mission and how the existing missions  
 could be impacted. The following slides summarize  
 the aircraft facilities and manpower changes  
 anticipated to be required to support the KC-46A  
 mission.  
 If Altus is selected for the KC-46A FTU or  
 the MOB 1 mission, the existing KC-135 and C-17  
 missions would remain and continue to operate.  
 Implementation of the FTU Mission would  
 require a variety of on-bas development projects,  
 including demolition, new construction and  
 renovation. The FTU mission would increase the area  
 population by approximately 478 people, including  
 estimated dependents, and would result in a 38  
 percent increase in annual aircraft operations.  
 At each base, KC-46A aircrews would utilize  
 the existing KC-135 flight tracks and air refueling  
 tracks and fuel jettison areas (if necessary).  
 0012  
 KC-46A aircrews associated with the FTU  
 would use the same four auxiliary airfields that are  
 currently being used by KC-135 aircrews. These  
 include Clinton-Sherman Industrial Airpark, Lubbock  
 Preston Smith International Airport, Fort Worth  
 Alliance Airport and Rick Husband Amarillo  
 International Airport.  
 For the purposes of this Draft EIS, Altus  
 was evaluated for the potential environment impacts  
 associated with MOB 1s. Implementation of the MOB 1  
 mission would result in more new construction,  
 demolition and renovation that the FTU mission and  
 would increase the population by approximately 4,917  
 peopled, including estimated dependents. Annual  
 aircraft operations would also increase by  
 approximately 31 percent. KC-46A aircrews associated  
 with MOB 1 at all of the bases would not use  
 auxiliary airfields.  
 Fairchild Air Force Base has been identified  
 as an alternative for the MOB 1 Mission. If  
 Fairchild is selected to hose the MOB 1 Mission, the  
 existing 30 KC-135 aircraft would be replaced with  
 36 KC-46A aircraft.  
 Implementation of the MOB 1 Mission would  
 require a variety of on-base development projects,  
 Page 5

13.11.14. Altus transcript.txt  
 0013  
 including demolition, new construction and  
 renovation. This mission would increase the area  
 population by approximately 3,095 people, including  
 estimated dependants, and would result in a 62  
 percent increase in annual aircraft operations.  
 Grand Forks Air Force Base has been  
 identified as an alternative for the MOB 1 Mission.  
 If Grand Forks is selected to host the MOB 1 Mission,  
 the existing remotely piloted aircraft missions would  
 continue, and the KC-46 A mission would constitute an  
 additional mission.  
 Implementation of the MOB 1 Mission would  
 require a variety of on-base development projects,  
 including demolition, new construction and  
 renovation. This mission would increase the area  
 population by approximately 4,526 people, including  
 estimated dependants, and would result in a 226  
 percent increase in annual aircraft operations.  
 If McConnell Air Force Base is selected to  
 host the MOB 1 Mission, the existing 44 KC-135  
 aircraft would be replaced by 36 KC-46A aircraft.  
 Implementation of the MOB 1 Mission would  
 require a variety of on-base development projects,  
 including demolition, new construction and  
 renovation. This mission would increase the area  
 0014  
 population by approximately 291 people, including  
 estimated dependants, and would result in a 24  
 percent increase in annual aircraft operations.  
 For the purposes of this Draft EIS,  
 McConnell was evaluated for the potential environment  
 impacts associated with implementation of the FTU  
 Mission. This evaluation was conducted under the  
 assumption that the existing KC-135 Mission would  
 remain in place.  
 Implementation of the FTU Million would  
 result in less new construction, demolition and  
 renovation that the MOB 1 Mission and would increase  
 the population by approximately 570 people, including  
 estimated dependents. Annual aircraft operations  
 would also increase by approximately 107 percent.  
 KC-46A aircrews associated with the FTU  
 would also use three auxiliary airfields that are  
 currently being used by the KC-135 aircrews. These  
 airfields include Clinton-Sherman Industrial Airpark,  
 Forbes Field, and Wichita Mid-Continent Airport.  
 We would like to emphasize that, although  
 preferred alternatives for the FTU and MOB 1 have  
 been announced, no final decision has been made on  
 either of the two KC-46A Missions currently under  
 analysis in the Draft EIS.  
 0015  
 We look forward to inputs provided from the  
 public and affected communities as we proceed through  
 the environmental impact analysis. Once the  
 requirements of the environmental impact analysis  
 process are complete, the Air Force will make its  
 final basing decision.  
 Thank you for your attention.  
 I will not turn the presentation over to  
 Mr. Dale Clark, of the Air Force NEPA Center to  
 discuss the NEPA process and provide greater detail  
 Page 6

## A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
 on potential impacts as described in the Draft EIS.  
 Thank you.  
 Thank you, Colonel Cargle.  
 Good evening, ladies and gentlemen.  
 I am Dale Clark. I'm chief of the Air Force  
 NEPA Center at Lackland Air Force Base in San  
 Antonio. The NEPA Center was responsible for the  
 analysis of this proposed action.  
 I'm here tonight to discuss the results of  
 the Environmental Impact Analysis for the proposal  
 presented by Colonel Cargle.  
 The Draft EIS has been prepared in  
 accordance with the requirements of NEPA, which  
 requires Federal agencies to analyze the potential  
 environmental consequences of a proposed action, and  
 reasonable alternatives -- including a no action  
 alternative -- before any action can be taken. The  
 goal of conducting an EIS is to support sound  
 decisions through the assessment of potential  
 environmental consequences, as well as the  
 involvement of the public in the process. The  
 results of this analysis and other relevant factors  
 will be considered before a final decision is made by  
 the Air Force on this proposal.  
 Your input during the past public scoping  
 period and during this public comment period will  
 help the Secretary of the Air Force make the most  
 informed decision possible on this proposal.  
 As you can see on this slide, there are  
 several key steps to the Environmental Impact  
 Analysis Process. We are currently at the public and  
 agency draft EIS review state. This period began  
 with the Federal register publication of the Notice  
 of Availability for the Draft EIS. At that time,  
 copies of the Draft EIS were mailed to local  
 libraries, State and Federal Representatives and  
 individuals who requested copies during the EIS  
 scoping period.  
 The normal review period required by NEPA is  
 45 days. Our date for completion of the public  
 comment period is December 9, 2013. The Public  
 Hearings this week are being held in the same  
 communities as the previous public scoping meetings  
 in order to provide the affected communities with the  
 opportunity to comment on the Draft EIS.  
 After the public comment period closes, we  
 will review all comments received at the Public  
 Hearings, through the mail, or electronically on our  
 website, and use them to prepare the Final EIS.  
 Substantive comments will be reviewed and responded  
 to in the Final EIS.  
 The Final EIS is scheduled to be released in  
 March of 2014. After the Final EIS, Notice of  
 Availability is published in the Federal Register.  
 The Air Force must observe a waiting period of at  
 least 30 days before signing the Final Record of  
 Decision to document which alternative the Air Force  
 selects for implementation.  
 The Draft EIS presents information on  
 potential environmental consequences associated with  
 implementing the FTU and MOB 1 Missions at each of

Page 7

13.11.14. Altus transcript.txt  
 the four bases. The potential environmental  
 consequences are grouped into the five categories  
 shown on this slide and the subcategories represent  
 the eleven resource areas evaluated at each  
 installation.  
 The next set of slides describes the  
 potential environmental consequences at each of the  
 four bases. For the purpose of this presentation,  
 the potential environmental consequences at each  
 base have been summarized in broad terms. For a much  
 more detailed evaluation of the potential  
 consequences, please refer to Chapter 4 of the EIS.  
 Implementation of the FTU Mission at Altus  
 would expose an additional 584 acres of off-base land  
 and an estimated 176 off-base residents to noise  
 levels of 65 decibels or greater. As is shown in the  
 noise contour map, much of this land is located  
 directly to the north and south of the runways.  
 Noise resulting from the use of the Four auxiliary  
 airfields is not anticipated to be noticeable. Other  
 than the noise increases, no other resource areas are  
 anticipated to be impacted by the FTU Mission.  
 Implementation of the FTU Mission would add  
 up to 5876 full-time military, dependents and  
 students to Jackson County, resulting in a 2.2  
 percent increase in the county population.  
 A variety of demolition, construction and  
 renovation projects would be required for the FTU  
 Mission, resulting in positive economic impacts to  
 Jackson County and the surrounding areas.  
 Implementation of the MOB 1 Mission at Altus  
 would expose an additional 155 acres of off-base land  
 and an estimated 6 additional off-base residents to  
 noise levels of 65decibels or greater. Because three  
 squadrons are required for the MOB 1 Mission,  
 substantially more construction, demolition and  
 renovation would be required. Most notable is the  
 construction of the new ramp and apron area for  
 parking 15 additional aircraft.  
 Implementation of the MOB 1 Mission would  
 add up to 4,917 full-time military and dependents to  
 Jackson County, resulting in an 18.6 percent increase  
 in the county population. And increase of this  
 magnitude could result in traffic congestion near the  
 base and place additional strain on base  
 infrastructure. No other resource areas are  
 anticipated to be impacted by the MOB 1 Mission.  
 Implementation of the MOB 1 Mission at  
 Fairchild Air Force Base would expose an additional  
 53 acres of off-bas land and an estimated two  
 off-base residents to noise levels of 65 decibels or  
 greater.  
 Implementation of the MOB 1 Mission would  
 add up to 1,095 full-time military and dependants to  
 Spokane County, resulting in a 0.2 percent increase  
 in county population.  
 One historic building, Hangar 2050, could be  
 adversely affected by the implementation of the MOB 1  
 Mission. Consultation with the Washington State  
 Historic Preservation Office has been initiated and

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### A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
 would be completed if Fairchild Air Force Base is  
 selected to host the MOB 1 Mission.  
 No other consequences are anticipated for  
 the MOB 1 Mission at Fairchild Air Force Base.

Implementation of the MOB 1 Mission at Grand  
 Forks Air Force Base would expose an additional 62  
 acres of off-base land. No off-base residents would  
 be exposed to noise levels of 65 decibels or greater.  
 The KC-46A parking plan was specifically  
 designed to minimize conflicts with the existing RPA  
 Missions at Grand Forks. In addition, the FAA  
 requires that Air Traffic Control deconflict remotely  
 piloted aircraft and manned aircraft operating in  
 Class D airspace around Grand Forks Air Force Base.  
 Approximately two acres of potential  
 wetlands could be impacted by the proposed action.  
 Should Grand Forks Air Force Base be selected to host  
 the MOB 1 Mission, the Air Force would work with the  
 U.S. Army Corps of Engineers and the North Dakota  
 State Water Commission to determine if the wetlands  
 are subject to regulation and determine appropriate  
 permit and potential mitigation requirements.  
 Implementation of the MOB 1 Mission would  
 add up to 4,526 full-time military and dependents to  
 Grand Forks County, resulting in a 6.8 percent  
 increase in county population.  
 No other consequences are anticipated for  
 the MOB 1 Mission at Grand Forks Air Force Base.

Implementation of the MOB 1 Mission at  
 McConnell Air Force Base would decrease the number of  
 acres by 386 and the number of people by 199 exposed  
 to noise levels of 65 decibels or greater. Reduction  
 in noise levels can be primarily attributed to  
 replacement of the 44 KC-135 aircraft with only 36  
 somewhat quieter KC-46A aircraft.  
 A substantial amount of construction,  
 demolition and renovation would be required to  
 implement the MOB 1 Mission and the demolition of  
 Hanger 1106 would result in an adverse effect to this  
 historic building. The Air Force is working with the  
 Kansas State Historical Preservation Officer on  
 Memorandum of Agreement to mitigate these effects.  
 In addition, a portion of the McConnell  
 Creek Floodplain would be impacted with the addition  
 to Building 1220. To minimize potential impacts,

Page 9

13.11.14. Altus transcript.txt  
 construction designs would incorporate measures for  
 construction in the floodplain.  
 Implementation of the MOB 1 Mission would  
 result in a slight decrease of 291 full-time military  
 and dependents in Sedgwick County, or a 0.1 percent  
 decrease in county population. This decrease is not  
 anticipated to negatively affect Sedgwick County.  
 No other resource areas are anticipated to

be impacted by the MOB 1 Mission.  
 Implementation of the FTU Mission at  
 McConnell Air Force Base would increase the number of  
 acres by 273 and the number of people by 594 exposed  
 to noise levels of 65 decibels or greater. The  
 increase in noise levels is primarily attributed to  
 the addition of up to eight additional aircraft in  
 addition to the existing KC-135 Mission. The  
 additional acres affected by noise are primarily  
 located directly to the north and south of the two  
 runways.

A lesser amount of construction, demolition  
 and renovation would be required to implement the FTU  
 Mission, and no historic structures would be  
 affected.

Implementation of the FTU Mission would  
 result in an increase of 5470 full-time military,  
 dependents and students to Sedgwick County, or a 0.2  
 percent increase in county population.  
 No other resource areas are anticipated to  
 be impacted by the FTU Mission.

This concludes my portion of this  
 presentation. And I thank you for your attention.  
 I will now turn the floor back to Lieutenant  
 Colonel Richardson, who will provide you with

information on the second part of tonight's Hearing,  
 the public comment period.  
 Thanks very much.

LIEUTENANT COLONEL RICHARDSON: Before we  
 move into the public comment part of the Hearing, we  
 are going to take a break. We're going to take about  
 15 minutes. I'd like to start up at 6:15.

If you do wish to speak but have not yet  
 filled out a white speaker form, please see the desk  
 at the entrance to the room here to get that filled  
 out.

So this Hearing is in recess until 6:15.  
 (Hearing recessed at 5:59)

LIEUTENANT COLONEL RICHARDSON: Ladies and  
 gentlemen, we will now continue the Hearing and move  
 into the public comment part.

If you do decide that I you want to speak,  
 as we go along, just raise your hand, and somewhere  
 from our staff will give you a form.

The way this is going to work is I will call  
 you by name and then you may approach the microphone  
 here. To help our stenographer, please begin by  
 stating your name and the name of the organization,  
 if any, that you represent. It would also help if  
 you spell the your last name.

Please do not provide any other personal  
 information, such as your home address or phone

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## A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
 3 number. Again, your comments are recorded verbatim.  
 4 They will be used to develop a transcript and  
 5 permanent record of this meeting and will be  
 6 published in the Final EIS. Your name will be  
 7 included, along with your comments. Personal home  
 8 addresses and phone numbers will not be published in  
 9 the Final EIS.  
 10 And before I continue, I had wanted to  
 11 recognize some folks who are with us tonight.  
 12 First, I'd like to recognize Oklahoma State  
 13 Senator Mike Schulz.  
 14 Next, Altus City Councilman Mike Patterson.  
 15 And Altus City Councilman Rick Stine.  
 16 All right. On the slide, it says that each  
 17 speaker will have three minutes to provide oral  
 18 comments on the proposed action and alternatives. I  
 19 am not going to limit you to three minutes. If you  
 20 want to talk longer, that's okay. We're also not  
 21 going to have anyone keep formal track of your time.  
 22 There is no obligation to talk for a full three  
 23 minutes. That's up to you. Come on up here, say  
 24 what you would like to say about the proposed EIS and  
 25 then, when you're done, you can sit down, and I'll  
 0026  
 1 call the next person.  
 2 If you have any sort of other presentation,  
 3 I ask that you submit that in the form of a written  
 4 comment.  
 5 The public comment period is set to end at  
 6 8:00 p.m. If everyone who signed up to speak has had  
 7 a chance to do so before that time, and I anticipate  
 8 that will happen, I will ask if any speaker would  
 9 like any additional time. Just let me know, raise  
 10 your hand, and you can come back up here and talk.  
 11 I'll also ask if anyone else who hasn't  
 12 spoken would like an opportunity to speak.  
 13 If you want to add something later to your  
 14 oral comments or if you'd rather not speak here  
 15 tonight, you can submit written comment. There is  
 16 no page limit on written comments. And the Air Force  
 17 gives equal weight to oral and written comments.  
 18 Both become part of the official record and are  
 19 included in the Final EIS.  
 20 A few reminders before we get started.  
 21 Please limit your comments to the analysis in the  
 22 Draft EIS. That's the purpose of the public comment  
 23 period.  
 24 As I mentioned earlier, this is not a Q and  
 25 A session. It's an opportunity for you to put on the  
 0027  
 1 record your views and concerns about the proposal  
 2 that you want the decision makers to consider.  
 3 Questions that you pose during your verbal  
 4 testimony will become part of the record and will be  
 5 considered.  
 6 After we've completed the formal part of the  
 7 Hearing, Air Force representatives will continue to  
 8 be available for discussion.  
 9 And a reminder, those of you who are  
 10 speaking, you may approach this podium, state and  
 11 spell your name for the stenographer, and then  
 12 indicate your affiliation, if any, for the record.  
 13 The first speaker I would like to welcome is  
 Page 11

13.11.14. Altus transcript.txt  
 14 Senator Mike Schulz.  
 15 SENATOR SCHULTZ: Mike Schulz, S-C-H-U-L-Z,  
 16 Majority Floor Leader, Oklahoma State Senate.  
 17 It's a little concerning that, ma'am, you  
 18 just said you're not going to hold us for three  
 19 minutes and then you start off with a politician.  
 20 These comments will be very brief. On  
 21 behalf of the State of Oklahoma and on behalf of  
 22 certainly Southwest Oklahoma, only behalf of  
 23 Representative Charles Ortega and myself, we'd like  
 24 to thank you all for being here tonight. Thank you  
 25 for your work thus far in this project. And  
 0028  
 1 certainly anything that the State of Oklahoma can do  
 2 to further this project, you certainly have our full  
 3 support.  
 4 We're excited about the opportunity to  
 5 utilize the assets, not only at Altus Air Force Base,  
 6 but also at Clinton-Industrial Air Park, as well,  
 7 both of which are tremendous assets for the Air Force  
 8 and for the State of Oklahoma. We're certainly glad  
 9 you all are here tonight.  
 10 Thank you.  
 11 LIEUTENANT COLONEL RICHARDSON: The next  
 12 speaker I'd like to welcome to the podium is Dr. Joe  
 13 Leverett, Chairman of the Altus Military Affairs  
 14 Committee.  
 15 MR. LEVERETT: My name is Joe Leverett,  
 16 L-E-V-E-R-E-T-T. I am Chairman of the Altus Military  
 17 Affairs committee.  
 18 And only behalf of the Military Affairs  
 19 Committee, we are excited that you're here. We're  
 20 excited that Altus is considered the beddown for the  
 21 KC-46A FTU.  
 22 I know at McConnell Air Force Base, there  
 23 were quite a few more politicians that spoke. We  
 24 elected to maintain the integrity of the process by  
 25 not putting undue political pressure on you, Colonel  
 0029  
 1 Richardson.  
 2 So we are excited about the FTU. Altus is  
 3 the most logical base for the beddown of the KC-46A,  
 4 co-location of the C-17 and the KC-135 make it the  
 5 perfect training environment. We have a national  
 6 treasurer in our aerospace, the proximity to our  
 7 refueling tracts, and we're excited about the  
 8 process.  
 9 Centralized training has been a mainstay of  
 10 the Air Force. We, here, feel that that's the best  
 11 process, continue to train tankers and air lifters.  
 12 So we're excited about you coming.  
 13 The Military Affairs Committee, the Chamber,  
 14 the City of Altus will do everything we can to make  
 15 sure that this beddown goes smoothly. And, remember,  
 16 Altus is a community that has great airspace, ramp  
 17 space and a community that loves the Air Force.  
 18 Thank you.  
 19 LIEUTENANT COLONEL RICHARDSON: Do I have  
 20 anyone else who would like to come to the podium and  
 21 speak?  
 22 As I mentioned earlier, Air Force  
 23 representatives will continue to be available out by  
 24 the display boards to continue discussions. However,  
 Page 12

### A.7.3.3 Altus AFB Public Hearing Transcript (Continued)

13.11.14. Altus transcript.txt  
25 discussions that take place at the boards will not be  
0030  
1 part of the official record of the EIS.  
2 I thank you for your time and interest.  
3 Tonight is no the end of your opportunity to  
4 participate in the environmental review process.  
5 Again, written comment sheets are available at the  
6 registration table. You can turn in these sheets  
7 tonight or mail them later.  
8 If you would like your own copy of the Final  
9 EIS, please let one of the representatives at the  
10 registration table know or send a letter or a  
11 postcard asking for your own copy. The Air Force  
12 will send copies of the final EIS to you.  
13 I'm not going to formally adjourn until  
14 8:00 p.m. or later.  
15 Therefore, this is what we're going to do.  
16 The Hearing is in recess and will be adjourned at  
17 8:00, if not earlier reconvened.  
18 I thank you for your time tonight.  
19 (Hearing Recessed)  
20 (Hearing Adjourned at 8:00 p.m.)  
21  
22  
23  
24  
25  
0031  
1 C E R T I F I C A T E  
2  
3 STATE OF OKLAHOMA        )  
4 COUNTY OF OKLAHOMA        ) SS.  
5  
6 I, Judy Thompson, a Certified Shorthand Reporter for  
7 the State of Oklahoma, do hereby certify that Public  
8 Hearing was taken by me in stenotype and thereafter  
9 transcribed and is a true and correct transcript of the  
10 Public Hearing; that the Public Hearing was taken on  
11 November 14, 2013, in Altus, State of Oklahoma; that I am  
12 not an attorney for nor a relative of any party, or  
13 otherwise interested in this Public Hearing.  
14 WITNESS MY HAND AND SEAL THIS 25TH DAY OF NOVEMBER,  
15 2013.  
16  
17 Judy Thompson  
18 Oklahoma Certified Shorthand Reporter  
19 Certificate No. 01674  
20 Exp. Date: December 31, 2012  
21  
22  
23  
24  
25

A.7.3.4 Fairchild AFB Draft EIS Comments



F\_001\_D\_A

SPOKANE CITY COUNCIL  
808 W. Spokane Falls Blvd.  
Spokane, WA 99201-3335  
(509) 625-6255

Ben Stuckart  
Council President

November 20, 2013

Dear Jean Reynolds,

Spokane is a proud military city. From the local World War II vet taking his honor flight back to our nation's capital, to the SERE student PCS'ing for the first time – we embrace our military legacy and stand ready to meet future mission expansion at Fairchild. Our city is a strong regional partner that continues to actively pursue ways to strengthen the base and the surrounding West Plains area. We will continue to advocate for land use regulations consistent with Fairchild's Compatible Use Zone criteria. We are also proud to extend airmen and their families educational, economic, and cultural opportunities second to none. And our regional infrastructure and transportation system has the capacity to service an increase in base personnel.

The incredible Total Force Integration success of the 92<sup>nd</sup> Air Refueling Wing and its Air National Guard counterpart, the 141<sup>st</sup> Air Refueling Wing serves as a model for our regional partnership. As an integral piece of this partnership, the Spokane City Council will remain dedicated to ensuring the long-term viability of Fairchild, and remain steadfast in our belief that the first KC-46A will land on our base's new runway.

Thank you for your thorough selection process, and for allowing our citizens the opportunity to share their passion for Fairchild on several occasions.

Sincerely,

Ben Stuckart

F\_002\_D\_J

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN  
OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL  
IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: Fairchild AFB

DATE: 20 Nov 2013

Fairchild should selected due to weather +  
survival school in place. Also consider its record  
back to its start in the late 1930's

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: 1st Lt Richard F. Sawdy USAF Ret

Organization: Ret

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

##### F\_003\_D\_A

*\* Pat Rushing provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

MR. PAT RUSHING: Good evening, NEPA Team. Welcome to Spokane. We're happy you're here. My name is Patrick Rushing, R-u-s-h-i-n-g. I am the mayor of Airway Heights, Washington. While reviewing the draft EIS, I noticed that a lot of the reference was made to the Spokane County Joint Land Use Study or the JLUS.

Just for your information, the City of Airway Heights, Spokane City, the county, and Medical Lake, have all adopted, in one form or another, of the Joint Land Use Study. The City of Airway Heights is unique in ours because we had to take the Joint Land Use Study and incorporate a lot of the DOD directives from 2012 into that study, so that we now have what the JLUS implementation committee has deemed as the most protective of Fairchild Air Force Base for current and future missions.

The other thing I would like to say is that there are tornadoes in Wichita, Kansas, and in Oklahoma, and we don't have that here. We have pretty nice weather. So you might build some nice buildings down there and save a lot of money, but if you come to Spokane, you will actually save a lot of that money. We have buildings that are just now falling apart that were built back during World War II. Again, thank you for coming and listening to my comments.

##### F\_004\_D\_A

*\* Adam McDaniel provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

MR. ADAM McDANIEL: I'm Adam McDaniel, M-c-D-a-n-i-e-l. I'm the senior executive assistant to Council President Ben Stuckart and he was unable to make it tonight. He is out of town. Spokane is a proud military city, from the local World War II vet taking his Honor Flight back to our nation's capitol to the SEARS student training for the first time. We embrace our military like a seed, and we stand ready to meet future expansion at Fairchild.

Our city is a strong regional partner that continues to actively pursue ways to strengthen the bay and the surrounding West Plains area. We will continue to advocate for land use regulations consistent with Fairchild's Compatible Use Zone Criteria. We are also proud to extend to airman and their families educational, economic, and cultural opportunities second to none, and our regional infrastructure and transportation system has the capacity to service the increase in base personnel.

The incredible integration of the 92nd Air Refuelling Wing and it's Air National Guard counterpart, the 141st Air Refuelling Wing, serves as a model for regional partnership and as an integral piece of the partnership, the Spokane City Council will remain dedicated to ensure the long-term viability of Fairchild, will remain steadfast in our belief that the first KC-46A will land on our base runway. Thank for your thorough selection process and for allowing our citizens the opportunity to share their passion for Fairchild on multiple occasions. Sincerely, Ben Stuckart.

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

F\_005\_D\_T

\* Scott Wheat (Spokane Tribal Council) provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.

MR. SCOTT WHEAT: Good afternoon, ladies and gentlemen. My name is Scott Wheat, W-h-e-a-t. I am the tribe's lead attorney, general counsel. On behalf of the Spokane Tribe, through its tribal council, I want to welcome Air Force staff here from various parts of the country, I would imagine both military and civilian. We want to welcome you to the tribe's aboriginal homelands. In fact, Fairchild Air Force Base, the tribe has a deep connection to that piece of ground. It lies within five miles of the 1851 Battle of Four Lakes between the Spokane Tribe and the U.S. Army. And as a matter of fact, the site lies within the field of battle for the September 5th, 1858 Battle of Spokane Plains. Although, these days, and for a very long time, they have been on peaceful terms with the United States and the Armed Forces. And I would like to mention that the tribe and its members have a very high rate of military service, as is not uncommon with Indian tribes, including service in the United States Air Force. And we have enjoyed a very strong, positive relationship with Fairchild Air Force Base historically. We've testified to support, you know, keeping the base open. But not only does the tribe have historic connections to that area, we have modern connections as well. We own 145 acres of land within a couple of miles of the base and we have economic operations on that piece of ground and we work closely with the base to ensure that our operations are consistent and do not interfere with the important military operations that occur at Fairchild. We, too, participated in the development of the JLUS policies, and as with other local jurisdictions, the tribe has adopted and implemented the JLUS that will apply to all development within that 145 acre piece. That is one of the things that we noted in our review of the EIS that we certainly wanted to include, and we will supplement or include in our written testimony, which we will submit by the deadline, the tribe's copy of its JLUS ordinance. And we would appreciate if the EIS could be supplemented to reflect the tribe, as a local government, has also enacted land use regulations consistent with JLUS policies and recommendations. Finally, I'm sure my three minutes is coming up quick, also in our review of the EIS, and we wanted to comment tonight, it's very appropriate that, as I identified the tribe as the resident tribe to be contacted to ensure that any cultural resources are appropriately cataloged and protected pursuant to relevant federal law, NEPA, etc. So we certainly stand willing and ready to assist the base in assessment of those impacts, if that need arises in the future. I do want to echo Mayor Rushing's learned and sacred advice, that we do rarely, rarely have tornados in this part of the country. We would certainly hope that the base, the Air Force keeps an open mind. We know a preferred alternative has been selected, but of course, that's not really why you all are here tonight. Our review of the EIS, we concur with the assessment and impacts and affected environment. So with that, I will conclude. Thank you very much for this opportunity to testify.

F\_006\_D\_I

\* Margaret Jones provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.

MS. MARGARET JONES: Margaret Jones, spelled J-o-n-e-s. I find your presentation of interest in what it leaves out, rather than what it includes. If I were to use your presentation to make a decision tonight, Fairchild would be number one because it doesn't have any of the environmental mitigation situations that are at McConnell, nor does it have the environmental situations of climate that you have in Altus or at McConnell. One thing that you have failed to mention in this is that Fairchild is the best kept secret in the Air Force. Every person who's ever served at Fairchild has fallen in love with the area because it provides a lifestyle for all of them. If you're a fisherman, it's there. If you're a hunter, it's there. If you want to play golf, it's there. If you want to go to college football games, it's there. We have one of the top-rated football teams in the nation right here at Eastern. We have the top rated basketball team at Gonzaga. These you did not include in this. Of course, it's not part of the environment, but as a member of two county boards, I can tell you that for transportation needs, the STA will provide whatever you need, including ride share, which is one of their programs, plus they have a paratransit for anyone that needs paratransit. I can also tell you if there's any hazardous problems, that we have the state-of-the-art hazard waste people working right here with the Waste to Energy Plant, and at SIA. We are ready and willing to do whatever is necessary to support Fairchild. However, you do leave us a little bit in limbo because we can't figure out whether we need to tax ourselves to do some things or not because we can't get a straight answer from the Air Force as to what direction you're going.

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

##### F\_007\_D\_I

*\* Dave Jones provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

MR. DAVE JONES: Dave Jones, J-o-n-e-s. I am a retired colonel base commander at Fairchild. I would like to mention just a couple of quick things. I won't take long. One, and which was not discussed here, there's no runway requirements. We have a brand new runway. We have excellent taxiways. They've been fixed, too. All of which were not so good 40 years ago, but they're all very good now.

Yes, we have an old hangar. It was built way back when this was the primary experimental base for SAC when they conducted their annual bomb comp. and constantly, we had to refuel up to 100 aircraft simultaneously. As a result, we have the largest gasoline supply system in the Air Force here at Fairchild. So I think a lot of things weren't considered. The other thing is I know all the other bases. And the Tornado Alley has hit Altus and it's McConnell in the past. It just hit Illinois, which it almost never hits. The thing is, and at one time when I was around, it hit Sheppard, which they said, Oh, it will never hit Sheppard. We didn't even have an alarm for it, and it came through and cleaned out the whole warehouse. The thing is, tornadoes are disastrous to aircraft as we've seen just recently. I think that alone makes it questionable, that decision. The one up north is not a very good place to put this kind of business. I can understand why they chose McConnell to a certain extent because it's in the center of the country, but our primary mission today, right this moment, in the long range is going to be in the Pacific. That's why its base was here, was to supply the Pacific. We have traffic continuous out of here. However, with the tanker today, you can go all around the world, so you can put the tanker anywhere. You can put it in New York City if you wanted to, but I don't advise it. Thank you.

##### F\_008\_D\_O

*\* Sandra Jarrard provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

MS. SANDRA JARRARD: Good evening. Sandra Jarrard, spelled J-a-r-r-a-r-d, and I'm the director of Public Policy, Greater Spokane Incorporated. GSI supports Fairchild, and it strongly advocates for Fairchild Air Force Base to be the first base for the KC-46A tanker. Over the last 30 years, more than \$400 million has been invested in base infrastructure. The existing infrastructure combined with a history of modernization efforts provides for Fairchild Air Force Base to be the prime basing option.

Also Fairchild's strategic location makes it a gateway to the Asia Pacific destinations, ideal for staging operations in support of the nation's global ability requirements. Our community supports Fairchild Air Force Base. We recognize the great economic impact it has in the region. It is the largest single site employer. We will continue to advocate to be the first base to receive KC-46A tankers. Thank you.

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

F\_009\_D\_1

*\* Pat Spino provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

MR. PAT SPINO: Good evening, everyone. I'm Retired Tech Sergeant Pat Spino, Junior, and I was out here for ten years from '81 until January 31st, 1992 when I retired. And I'm -- I don't know if I've even seen a copy of the impact statement. I was reading what the issues are in the -- excuse me -- the locations they've chosen for the tankers and various other items of interest. And basically, based off -- to my wife and I, it's a convenience to have our -- mainly to get our medications filled out there and shopping like everybody else is, and if it closed, we would have to establish a mail order system with Tricare, which she just started doing, and so I can go through the VA. And otherwise, it would require us going all the way over to McChord, which would be the next closest base, to get any items we need, any conveniences, and stuff like that, but then that's kind of a long drive. So that's about my -- That's my concern about that, losing a convenience and a benefit that we all worked for those many years that we put in, and I would hate to see it go. So anyway, that's all I got to say on there. Thank you.

F\_010\_D\_1

*\* Jim McDevitt provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.*

GENERAL JIM McDEVITT: Thank you very much, team. Welcome to Spokane, and part of the Inland Northwest. I'm Jim McDevitt, M-c-D-e-v-i-t-t. I was in aircrew for five years active duty and then 30 years in the Air National Guard, the 141st Air Refueling Wing. 22 years of those flying years were flown off of Fairchild in the KC-135s. We appreciate being number two, real close, but I think there are a couple of things that maybe the study -- some of the subjective things the study doesn't measure. First of all, the 141st houses the 116th Air Refueling Squadron, and I was proud to be commander of that for a couple of years. It's the second oldest flying squad in the country, a long, proud history and a great association, a classic association, with the active duty, a pace setter, and a lot of things settle out of -- set a very, very high standard for the Air National Guard for the tanker community. I think that was highlighted from Desert Storm going forward. Another thing, and I know that that's measured, but I don't really know that the spirit and the kind of association and the kind of experience of the air crews quite shows up. I mean, I had, when I was a squadron commander, majors and lieutenant colonels, wheat ranchers, doctors, lawyers, school teachers, with 25 to 28 years of flying experience, tremendous experience, and tremendous mentors to not only our younger guard members, but the active duty. The other thing, too, that I don't know that you know and I don't know was brought up, is that I know when I was commander of the flying squadron, we had two or three of our guard pilots that were Boeing test pilots, Bob Kay, Mike Miller, and several others. So not only did we have a classic association with the active duty, we had a classic association with Boeing. I've been retired for a couple of years, several years, so I don't know what the composite of the squadron is now. But I do know we have a great relationship with Boeing company, and we've had, and still have probably, some Boeing test pilots that are part of our units. So thanks for all you do.

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

F\_011\_D\_I

\* Rich Hadley provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.

MR. RICH HADLEY: Thank you for this opportunity, H-a-d-l-e-y. Do you want any more talk about tornadoes? Oh, okay. So I would just say a couple of things. First, the community has a history of support for Fairchild Air Force Base, and frankly, for the military, that goes back a long way. The organization that I represent, which was the J Bird, is now Greater Spokane Incorporated, of which I'm the CEO, actually helped raise the \$15,000 dollars to buy the -- to create the air depot with the war department back in the '40s right at the end of World War II to establish an air depot. Then we raised \$140,000 dollars to buy 1,400 acres to give to the Air Force to create what became Geiger and then now Fairchild Air Force Base, and the Air Force bought the rest of the property to get us to about 5,000 acres.

So I think we ought to get points for that, you know. I think if you put \$140,000 in the '1940s and do all the figuring, what's that worth, probably a billion dollars of support? Anyway, but we've also supported ever since then, modernization of the base, and you've heard that mentioned, and I think that's really important because we're able, we're able to house those tankers, new tankers. We have

most of the hangar capacity, we have all hydro capacity, we have the ramp. We have the new operations facilities for the squadrons that have all been a part of the United States Government and congress helping us have.

We have a brand new runway, and when this was runway was down, the airplanes went to Spokane International Airport and Moses Lake, the old Clark Air Force Base to -- that wasn't Clark. Larson Air Force Base, and it was seamless to be able to continue the mission while also putting in a new runway.

In addition new facilities for airman, fitness center, education center, and great relationships with the community, including Operation Spokane Heros for the families of deployed military personnel and for those deployed. Our mission is central air mobility commander, education training command, the number one survival school, obviously, the joint personnel recovery center for the governmental officials training in survival, so we have all of that. It's a great facility for a survival education, as well as training and obviously refuelling.

Mr. McDevitt talked about the unique relationship between the Air National Guard and the active duty, which honestly, we felt probably would have gotten more

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recognition in the evaluation than it did given that the Air Force put a huge priority on that along with joint basing.

And we have the Army Reserve Center now at the base, looking at border patrol and looking at a many other missions that happen in a region that represents two million people, so that's important. The strategic location's been mentioned, the Pacific pivot pointing towards the coast. I happen to be on the civic leader group for the chief of staff of the Air Force and the secretary of the Air Force, we've had that discussion, and we're on the refuelling routes to the Pacific.

We're the Noble Eagle -- We're the only ones flying the Noble Eagle to protect us from what we don't want to have happen ever in this world. We're important for that, as well as being the refueling base for most of the Western United States. We're close to Boeing, we're just down the road. It would have been so easy for Boeing to be able to -- I realize Boeing has facilities in Kansas as well -- but building the tankers in Everett and then making -- having the engineers to be able to be over here as they went through the testing and the ops made way too much sense, I know, but I think that was the big advantage we had.

You've heard about natural resources, natural disasters, so we're the sixth safest community in the world -- in the country, maybe the world. We don't have hurricanes either, so we don't have floods, we don't have hurricanes, we don't -- Oh, yeah, did we mention tornadoes yet? We don't have

tornadoes, and so far we haven't has dust storms, so I think we're in good shape on that, too. I would just say we're proud of this base, and the community shows it all the time, 24/7. It really is. And I'm not trying to make light of it, but at the end of the day, for all of us and for you, I'm sure, we enjoy the fact that there's a lot of passion and emotion in the people that live here.

We're the ninth favorite community in the country to retire in, and for the military, the Air Force, we're number two. So there's a lot at stake here. We're happy to be -- We would love to be number one, we should have been number one, we are close to number one, and if the EIS proves out that your number one choice, there's a flaw there other than tornadoes, we will be happy to step in. We're ready to go. We can do it, and you will never see a community stand up to support this more than this community will. Thank you.

## A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

F\_012\_D\_I

\* Andrew Neunherz provided verbal comment at the Fairchild Public Hearing 11/20/13, comment received via transcript from court reporter.

MR. ANDREW NEUNHERZ: Good evening. I'm Andrew Neunherz, N-e-u-n-h-e-r-z. I have been on all sides of the issue. I'm a retired Air Force officer with 27 years of service, retired in 1993, served five years at Fairchild. I'm a retired banker here in Spokane after about 15 years of work in that effort, the past president of the West Plains Chamber of Commerce, and currently the vice chair of the Spokane County Planning Commission. What does all this say? It gives me the ability to say that Spokane, Fairchild, is the right place, it's the right time, and it's the right community to take on the added mission of a new tanker. We're ready for it.

When I was here stationed with Colonel Jones at Fairchild back in the '70s, the community was ready then. The community has been supportive from day one. It is supportive every day, and while I apparently have not been able to keep my svelte figure as the general and the colonel, I was at one time skinnier and 6 foot 2. Everybody said everything, it's all been said, but now is the time. Fairchild is the place. Thank you for the opportunity to speak.

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<p align="center"><b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b></p> <p align="center"><b>Public Hearing Written Comment Form</b></p> <p align="center">For more information or to submit comments online, please go to: <a href="http://www.kc-46A-beddown.com">www.kc-46A-beddown.com</a></p>
--

PLEASE PRINT LEGIBLY.

LOCATION: Lincoln Center Spokane WA DATE: 11/20/13

STRONGLY SUPPORT FAIRCHILD AFB KC-46A MOB 1 SITE + THE FIRST MOB 1 TO HOUSE THE KC-46A TANKERS.

OUR COMMUNITY SUPPORTS THE AFB MISSION STRONGLY.

NO SIGNIFICANT CONCERNS

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: KEVIN T. DOWDYOrganization: SPOKANE PUBLIC FACILITIES DISTRICTAddress: [REDACTED]City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)



F\_014\_D\_A

Allyson Brooks Ph.D., Director  
State Historic Preservation Officer

October 7, 2013

Mr. J. Dale Clark  
Chief  
Air Force NEPA Center  
2261 Hughes Avenue, Ste 155  
JBAS Lackland, TX 78236-9853

In future correspondence please refer to:

E.O.: 100713-20-USAF  
Property: Draft EIS for KC-46A Main Operation Base Beddown  
Re: Draft Comments

Dear Mr. Clark:

Thank you for contacting our office. I have reviewed the materials you provided for this proposal. The Washington State Department of Archaeology and Historic Preservation (DAHP) wishes to offer the following comments:

**Section 3.2.6: Fairchild AFB--Cultural Resources**

The report states that, "Washington SHPO...has not acted on the determinations for Buildings 2245 and 2025." According to our records, we responded to the Air Forces request for consultation regarding the eligibility of flight line resources on December 9, 2008, in a letter to Mr. Jonathan Wald, stating that buildings 2025 (Maintenance Hangar) and 2245 (Air Base HQ Group) were individually eligible for listing. The Draft EIS labels building 2025 as the "Snow Barn," however, inventory records provided by a US Air Force consultant indicate that the hangar referred to as the Snow Barn is building 2030. Please provide DAHP with a corrected inventory form so that both our agencies are using the same data when it comes to evaluating these resources.

Also, we noticed that Appendix A had no content. We trust that this will be addressed in a subsequent draft of the EIS.

I would appreciate receiving any correspondence or comments from concerned tribes or other parties that you receive as you consult under the requirements of 36CFR800.4(a)(4) and the requested information when it is available. These comments are based on the information available at the time of this review and on behalf of the State Historic Preservation Officer pursuant to Section 106 of the National Historic Preservation Act and its implementing regulations 36CFR800. Please contact me should you have any specific questions about our request and we look forward to receiving this material.

Sincerely,

Russell Holter  
Project Compliance Reviewer  
(360) 586-3533  
russell.holter@dahp.wa.gov

State of Washington • Department of Archaeology & Historic Preservation  
P.O. Box 48343 • Olympia, Washington 98504-8343 • (360) 586-3065  
www.dahp.wa.gov



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## Spokane Tribe of Indians

P.O. Box 100 • Wellpinit, WA 99040 • (509) 458-6500 • Fax (509) 458-6575

November 26, 2013

Ms. Jean Reynolds  
2261 Hughes Ave., Ste. 155  
JBAS Lackland, TX 78236-9853

### Re: Spokane Tribe of Indians' Comments on the Draft Environmental Impact Statement for the KC-46A Formal Training Unit and First Main Operating Base Beddown

Dear Ms. Reynolds:

On behalf of the Spokane Tribe of Indians ("Tribe"), thank you for this opportunity to comment on the Draft Environmental Impact Statement ("DEIS") for the KC-46A Formal Training Unit ("FTU") and First Main Operating Base ("MOB 1") Beddown. The Tribe fully supports the siting of the FTU and MOB 1 at Fairchild Air Force Base ("FAFB") in Washington State. The following comments address cultural and historic resource and land compatibility issues relative to FAFB that were raised in the DEIS.

#### FAFB: Cultural Resource Issues

The Tribe has deep historical connections to the land upon which FAFB lies. FAFB sits within the geographic core of the Tribe's federally-adjudicated exclusive aboriginal territory.<sup>1</sup> Moreover, FAFB is located within four miles of the site of the September 1, 1858 "Battle of Four Lakes" between the U.S. Army and the Spokane and allied tribes. The September 5, 1858 Battle of Spokane Plains raged across FAFB. Finally, there are over sixty documented sites of historic, archaeological, cultural or spiritual significance to the Spokane Tribe within a seven-mile radius of FAFB.<sup>2</sup>

Given the Tribe's well-documented connection to this area, federal and state agencies contact the Spokane Tribal Historic Preservation Officer ("THPO") when fulfilling their duties under National Historic Preservation Act, 16 U.S.C. 470 *et seq.* ("NHPA"), the Native American Graves Protection and Repatriation Act, 25 U.S.C. 3001 *et seq.* ("NAGPRA"), the Archaeological Resources Protection Act, 17 U.S.C. § 470 *et seq.*, and similar Washington State laws (RCW 658.60; RCW 27.34, 27.44, 27.53). The Spokane THPO works closely with the Washington State Historic Preservation Officer ("SHPO") to maintain records of all NHPA, NAGPRA and state law mandated documentation of sites of historic, archeological or cultural significance within the Tribe's ICC-adjudicated territory. If FAFB is selected, please be advised that the Tribe stands ready to assist the

<sup>1</sup> *Spokane Tribe of Indians v. United States*, Indian Claims Commission Docket No. 331.

<sup>2</sup> The Tribe has selected a seven-mile radius for illustrative purposes only. In fact, increasing the radius by two miles radically increases the number of historic, archaeological and cultural sites due to the location of the large number permanent village and fishing sites at Spokane Falls (in the heart of present day Downtown Spokane).

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

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Air Force in meeting its NHPA Section 106 obligations during the construction and operation phases of the project.

FAFB: Land Use Compatibility

The Tribe also enjoys modern connections to the vicinity of FAFB. In 2001, the United States took legal ownership of the "West Plains Property" in trust for the Tribe. The West Plains Property is located approximately two miles from FAFB, northwest of the intersection of Craig Road and U.S. Highway 2. The Tribe exercises governmental jurisdiction over this 145-acre "trust" parcel consistent with federal law. Since 2007, the Tribe has operated its "SPOKO" retail fuel and convenience store on this 145-acre parcel.

To further its goal of achieving self-sufficiency, the Tribe is planning a mixed-use development (referred to herein as the "Project" or the "Spokane Tribe Economic Project" or "STEP") on the West Plains Property. On February 24, 2006 the Tribe submitted a request to the BIA Northwest Regional Office requesting the Secretary to engage in a Two-Part Determination pursuant to Section 20 of the Indian Gaming Regulatory Act ("IGRA") (25 U.S.C. §2719) that would allow the Tribe to conduct Class II and Class III Gaming on the Project Site. See STOI Resolution No. 2006-171 dated February 2, 2006.

Because the project site is near FAFB, the Tribe reached out early to Base Command to ensure that STEP will not adversely affect FAFB Operations. Those efforts included the Tribe's participation in a Joint Land Use Study ("JLUS") commissioned by the Spokane County Board of County Commissioners and funded by the Department of Defense. The Department of Defense defines a JLUS as an "Analytical planning study of civilian development patterns and land use activities in the vicinity of a military installation that result in recommendations for instituting compatible civilian land use activities and development patterns that protect and preserve the utility and the operational effectiveness of military installations."<sup>3</sup> Spokane County prepared the JLUS in collaboration with FAFB, Spokane International Airport, local jurisdictions, and representatives from the Spokane Tribe and Kalispel Tribe.

The Tribe enacted the West Plains Development Code (attached), in order to implement JLUS recommendations on the West Plains Property. Consistent with the JLUS recommendations, the West Plains Development Code imposes restrictions and requirements for STEP, including building heights, density, sound attenuation, wildlife attractants, light and glare. The West Plains Development Code also incorporates mitigation requirements set forth in the Environmental Impact Statement prepared for STEP by the Bureau of Indian Affairs pursuant to Department of Interior regulations set forth at 25 CFR Part 292 ("STEP EIS"). As stated in the Final STEP EIS, at the invitation of the Bureau of Indian Affairs ("BIA"), the USAF participated in the NEPA process as a cooperating agency. The BIA thoroughly considered USAF official comments, provided on the Draft STEP EIS and the Preliminary Final STEP EIS, and in many instances changes were made to the Final STEP EIS as a result of USAF comments. BIA representatives coordinated directly with USAF representatives to ensure that any concerns raised in the comments were satisfactorily addressed. Importantly, the Tribe's West Plains Development Code also incorporates mitigation

<sup>3</sup> Department of Defense, 2004. Department of Defense Instruction Number 3030.3, Joint Land Use Study Program. Dated July 13, 2004.

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measures recommended within the Final STEP EIS to ensure that the construction and operation of STEP is consistent with FAFB operations.<sup>4</sup>

The DEIS mentions that the City of Airway Heights, the City of Spokane, the City of Medical Lake, and Spokane have implemented JLUS recommendations through the enactment of land use regulations. The Tribe respectfully requests that the Final EIS for KC-46A Formal Training Unit and First Main Operating Base Beddown similarly mention the Tribe's implementation of JLUS recommendations through the enactment of the Tribe West Plains Development Code.

We appreciate this opportunity to comment on the DEIS.

Sincerely,



Rudy J. Peone, Chairman  
Spokane Tribal Council

Attachment

<sup>4</sup> The Final STEP EIS can be found at [www.westplainseis.com](http://www.westplainseis.com)

*A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)*

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RESOLUTION  
Spokane Tribal Resolution 2013-221

**ENACTING SPOKANE TRIBE LAW AND ORDER CODE CHAPTER 48, ENTITLED “LAND USE AND DEVELOPMENT: WEST PLAINS PROPERTY”**

**WHEREAS**, the Spokane Tribal Business Council is the duly constituted governing body of the Spokane Tribe of Indians by authority of the Constitution of the Spokane Tribe; and

**WHEREAS**, under the Constitution of the Spokane Tribe, the Spokane Business Council is charged with the duty of protecting the general welfare of the Spokane Tribe and all Reservation residents; and

**WHEREAS**, under the Constitution of the Spokane Tribe, the Spokane Business Council is charged with administering the affairs and assets of the Spokane Tribe including Tribal lands and is charged with the duty of negotiating with and representing the Spokane Tribe before federal, state and local governments and their departments and agencies; and

**WHEREAS**, Article VIII(a) of the Constitution of the Spokane Tribe authorizes the Spokane Business Council to legislate and enforce a comprehensive Law and Order Code extending Tribal civil and criminal jurisdiction over all persons residing or coming upon the Reservation and over all land and water areas over which the Tribe has jurisdiction; and

**WHEREAS**, the Tribe exercises jurisdiction over the “West Plains Property” – an approximately 145 acre parcel of land located within the City of Airways Heights, Washington, that is owned by the United States in trust for benefit of the Tribe; and

**WHEREAS**, the West Plains Property is located near Fairchild Air Force Base, (“FAFB”), which is a critical part of our regional community and economy; and

**WHEREAS**, the Tribe has a longstanding and demonstrated commitment to maintaining continued operations at FAFB; and

**WHEREAS**, consistent with the 2009 Joint Land Use Study (JLUS) for the Fairchild Air Force Base (FAFB), the Tribe seeks to regulate development and land use activities on the West Plains Property in order to: reduce the potential for aviation hazards; prevent incompatible uses; optimize the potential mission profile, and; protect the health and safety of persons present upon the Tribe’s West Plains Property; and

**WHEREAS**, the Tribal Council determines that the proposed “Land Use and Development: West Plains Property” achieves the goals and implements the recommendations set forth in the 2009 JLUS; and

**NOW, THEREFORE, BE IT RESOLVED** that the Spokane Tribal Business Council hereby enacts the following Code, entitled “Land Use and Development: West Plains Property,” which shall be codified as Chapter 48 of the Spokane Law and Order Code:

ATTACHMENT

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

Chapter 48 – LAND USE AND DEVELOPMENT: WEST PLAINS PROPERTY

F\_015\_D\_T

Section 48-1 Findings, Purpose and Applicability

48-1.01 Applicability.

- (a) This Chapter provides land use standards and limitations on development for the Spokane Tribe's West Plains Property.
- (b) This Chapter shall take effect upon a favorable determination by the Secretary of the Department of the Interior for the West Plains Property pursuant to 25 U.S.C. § 2719(b)(1)(A), and concurrence by the Governor of the State of Washington.

48-1.02 Purpose

The purpose of this Chapter is to implement the 2009 Joint Land Use Study (JLUS) for the Fairchild Air Force Base (FAFB) by reducing the potential for aviation hazards, preventing incompatible uses, optimizing the potential mission profile, and protecting the health and safety of persons present upon the Tribe's West Plains Property.

Section 48-2 Definitions

48-2.01 Definitions.

The following terms, whenever used or referred to in this Chapter, shall have the following meanings, unless a different meaning clearly appears from the context:

- (a) "City" means the City of Airway Heights.
- (b) "Chapter" means this West Plains Property Development Code as enacted and amended by the Tribal Council.
- (c) "County" means Spokane County.
- (d) "Department" means the Spokane Tribal Planning Department.
- (e) "Director" means the Director of the Spokane Tribal Planning Department.
- (f) "FEIS" means the Final Environmental Impact Statement for the Spokane Tribe of Indians West Plains Casino and Mixed Use Development Project, for which a "Notice of Availability" was published in the Federal Register on February 1, 2013.
- (g) "High Intensity Uses" means uses that result in a density in excess of 150 persons per gross acre.
- (h) "JLUS" means the 2009 Joint Land-Use Study for Fairchild Air force Base.
- (i) "NEPA" means the National Environmental Policy Act, 42 U.S.C. § 4321 *et seq.*
- (j) "Person" means any natural individual, company, partnership, firm, joint venture, association, corporation, estate, trust, political entity or other identifiable entity.

F\_015\_D\_T

- (k) "Record of Decision" means the document that records the decision of the United States Department of the Interior concerning the Tribe's proposed construction of a casino and mixed-use development project on the West Plains Property.

- (l) "Spokane Tribal Lands" means:

- (1) All land within the limits of the Spokane Indian Reservation, notwithstanding the issuance of any patent, including rights of way running through the Reservation; and

- (2) All Indian allotments or other lands held in trust for a Spokane Tribal Member or the Tribe, including rights of way running through the same.

- (m) "Spokane Reservation" or "Reservation" means the area recognized as the Spokane Indian Reservation by the United States Department of the Interior.

- (n) "State" means the State of Washington.

- (o) "Tribal Council" means the Spokane Tribal Business Council.

- (p) "Tribe" or "Tribal" means or refers to the Spokane Tribe of Indians.

- (q) "West Plains" or "West Plains Property" means the approximately 145-acre parcel of land owned by the United States, in trust for the Tribe, situated within the boundaries of the City of Airway Heights, Washington, and more particularly described as follows:

- (1) The Southeast 2¼ of Section 22, Township 25 North, Range 41 East, W.M. in Spokane County, Washington EXCEPT that portion conveyed to the State of Washington by deed dated June 19, 1929 recorded under Recording No. 997235 and dated July 25, 1942 recorded under Recording No. 557182A; ALSO except that portion conveyed to Spokane County for Craig Road by deed recorded June 7, 1906 under Recording No. 146192; ALSO except the east 830 feet of the South 497.5 feet of the Southeast ¼ of said Section 22, containing 145 acres, more or less.

Section 48-3 Acknowledgement and Acceptance of Current and Future FAFB Operations

48-3.01 FAFB Flight Operations

- (a) The Tribe acknowledges that the West Plains Property is located in an area impacted by aircraft noise and that present and future aircraft noise may interfere with the unrestricted use and enjoyment of the project site. The Tribe further acknowledges that aircraft noise may change over time by virtue of greater numbers of aircraft, louder aircraft, variations in airfield operations, and changes in airfield and air traffic control procedures.

- (b) The Tribe shall discharge Fairchild AFB from any liability for injuries to persons or damages to the West Plains Property by reason of noise, vibrations, odors, vapors, exhaust, smoke, dust or other effects that may be inherent in the operation of aircraft, caused or created by the flight or passage of aircraft in or through the airspace above the West Plains Property. This section shall not preclude

### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

F\_015\_D\_T

the claims for any physical injuries or damages caused by aircraft crashing into or otherwise coming into direct contact with the persons located on the West Plains Property.

(c) The Tribe shall not request Fairchild AFB alter its flight activities in relation to the West Plains Property.

(d) The Tribe acknowledges that Fairchild AFB will not change current or future flight operations for current or future aircraft even if new aircraft are assigned to the installation or attempts to minimize nuisances through sound attenuation mitigation measures are ineffective at avoiding complaints from patrons.

#### 48-3.02 Information to Employees, the Public and Lessees

(a) During construction and operation, information shall be made available to patrons and employees regarding the potential to see and hear military aircraft flying over the site through the use of signs and/or information pamphlets.

(b) Any lease agreements for commercial/retail uses shall acknowledge the potential for military aircraft operations in the site vicinity.

#### **Section 48-4 Height Restrictions**

##### 48-4.01 Height Restrictions.

(a) No structure shall exceed Federal Aviation Administration ("FAA") landing and/or approach and/or departure minimums for aircraft using the runway of FAFB, as demonstrated by compliance with the FAA Form 7560-1 review process, including documentation that the review process is complete and the FAA has no objections to the proposed development.

#### **Section 48-5 Density Restrictions**

##### 48-5.01 High Intensity Uses Prohibited.

High Intensity uses are prohibited on the West Plains Property.

##### 48-5.02 Calculation of Density.

Density shall be determined based on the maximum occupancy of persons per gross acre. Gross acreage shall be measured based on the site for a specific use. In other words, the buildings, structures and land area associated with that development (parking, storage, etc.).

#### **Section 48-6 Sound Attenuation**

##### 48-6.01 Sound Contours

The sound contours depicted on the 2009 Fairchild JLUS Boundary Map shall be utilized in implementing this Chapter.

#### 48-6.02 Sound Attenuation

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(a) All buildings within the project site shall be constructed to the following standards:

(1) All exterior walls and roof/ceiling assemblies shall be constructed to achieve an interior noise level of 45 dB Ldn.

(b) Requirements Specific to Hotel

(2) To ensure an interior noise level of 45 dB Ldn is met, any hotel shall be constructed with sound reduction materials with a Sound Transmission Class (STC) rating of 39 and exterior doors and windows with a STC rating of 25.

#### **Section 48-7 Prevention of Wildlife Attractants**

##### 48-7.01 Standing Water

(a) Bio filtration swales. Any bio filtration swales must be:

(1) Designed to drain within 48 hours;

(2) Covered with man-made or vegetate cover/netting designed to deter waterfowl.

(b) Drainage features.

(1) Drainage features must be designed to prevent open water.

##### 48-7.02 Consultation with Fairchild AFB

(a) During the design phase, Fairchild AFB shall be consulted to ensure that any new drainage features do not attract birds.

#### **Section 48-8 Light and Glare**

##### 48-8.01 Light and Glare.

Regarding light and glare, the following restrictions shall apply:

(a) Placement of lights in buildings shall be designed in accordance with Unified Facilities Criteria (UFC) 3-530-01, Interior, Exterior Lighting and Controls so as not to cast light or glare offsite.

(b) No strobe lights, spot lights, or flood lights shall be used within the project site (except for the use of equipment by emergency, fire and law enforcement personnel in the performance of their official duties).

#### A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

- (c) Shielding, such as with a horizontal shroud, shall be used in accordance with F\_015\_D\_T UFC 3-530-01 for all outdoor light so as to ensure it is downcast.
- (d) Timers shall be utilized in accordance with UFC 3-530-01 to limit lighting in commercial areas and governmental facilities after regular business hours to reduce light-related impacts to nearby sensitive receptors.
- (e) All exterior glass shall be non-reflective, low-glare glass.

##### 48-8.02 Consultation with FAFB.

During the design phase, Fairchild AFB shall be consulted to develop a lighting plan that is compatible with AFB operations.

##### **Section 48-9 Permitted Land Uses**

##### 48-9.01 Permitted Land Uses.

Subject to the requirements of this Code and the Record of Decision, the following land uses are permitted on the West Plains Property (unless otherwise indicated, all designations correspond with the Standard Land Use Coding Manual):

- (a) Transportation, Communication and Utilities.
- (1) Railroad, rapid rail transit, and street railway transportation;
  - (2) Motor vehicle transportation;
  - (3) Highway and street right-of-way;
  - (4) Automobile parking;
  - (5) Communication;
  - (6) Utilities; and
  - (7) Other transportation, communication and utilities.
- (b) Trade
- (1) Wholesale trade;
  - (2) Retail trade – building materials, hardware and farm equipment;
  - (3) Retail trade – including shopping centers, discount clubs, home improvement stores, electronics superstores, etc.;

- (4) Retail trade – food;
- (5) Retail trade – automotive, marine craft, aircraft and accessories;
- (6) Retail trade – apparel and accessories;
- (7) Retail trade – furniture, home, furnishings and equipment;
- (8) Retail trade – eating and drinking establishments; and
- (9) Retail trade – other retail trade.
- (c) Services
- (1) Finance, insurance and real estate services;
  - (2) Personal services;
  - (3) Business services;
  - (4) Warehousing and Storage;
  - (5) Repair services;
  - (6) Professional services;
  - (7) Hospitals (CUP);
  - (8) Other medical facilities (CUP);
  - (9) Government services;
  - (10) Educational services (CUP);
  - (11) Childcare services, child development centers, and nurseries (CUP); and
  - (12) Religious Activities (CUP).
- (d) Cultural, Entertainment and Recreational
- (1) Cultural Activities (CUP);
  - (2) Churches (CUP);
  - (3) Nature Exhibits;
  - (4) Public Assembly (CUP);
  - (5) Auditoriums, concert halls (CUP);

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

- (6) Outdoor music shells, amphitheaters (CUP);
- (7) Recreational activities (including golf courses, riding stables, water recreation); and
- (8) Casino/gaming (no SLUCM number) (CUP).

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**Section 48-10  
Additional Conditions**

**48-10.01 Conditions, Restrictions and Mitigation Measures Set forth in the of Decision, FEIS** **Record**

- (a) In addition to the requirements set forth in this Chapter, development and land uses on the West Plains Property shall comply with conditions, restrictions, mitigation measures and other requirements set forth in a Record of Decision approving the Tribe's 2719(b)(1)(A) Application.
- (b) In the event of an inconsistency between the requirements of this Chapter and a Record of Decision approving the Tribe's 2719(b)(1)(A) Application, the more restrictive requirement shall control.

**Section 48-11  
Review of Permitted Uses; Conditional Use Permits**

**48-11.01 Review of Permitted Uses**

- (a) An application must be submitted, and a permit granted, for any proposed development.
- (b) The Department shall review applications for compliance with applicable requirements of this Chapter.
- (c) The Department may require a detailed site development plan to include but not be limited to a written description and illustration of site development, specific placement of all site improvements, height of improvements and other site alterations for the development.
- (1) The information shall include sufficient detail to allow the Department to determine that the proposal is compatible with the requirements of this Chapter.
- (d) Upon reviewing an application, the Department shall either grant or deny the requested permit.

**48-11.02 Conditional Use Permits ("CUP")**

- (a) Applications must be submitted for any development for which a conditional use permit is required.

F\_015\_D\_T

- (b) A detailed site development plan shall be provided with any application for a conditional use permit, which shall include but not be limited to a written description and illustration of site development, specific placement of all site improvements, height of improvements and other site alterations for the development.

- (1) The information shall include sufficient detail to allow the Department to determine that the proposal is compatible with the requirements of this Chapter.

- (c) The Director may attach reasonable conditions to a conditional use permit to assure consistency with this Chapter and compatibility with FAFB, which may address but shall not be limited to the following:

- (1) Establishment of Buffers;
- (2) Site specific building placement and enclosures;
- (3) Vegetation removal and limitations on vegetation heights;
- (4) Location and installation of utilities;
- (5) Post development management and operations;
- (6) Structural design;
- (7) Structural height, location and orientation;
- (8) Light and glare suppression;
- (9) Birdlife suppression;
- (10) Air emissions abatement;
- (11) Limitations on communication equipment;
- (12) Sound attenuation; and
- (13) Other reasonable conditions or safeguards that will uphold the purpose and intent of this Chapter.

- (d) The Director shall seek comment and recommendations from the FAFB Installation Commander pursuant to subsection (c)(13) above.


- (e) Upon reviewing an application for a conditional use permit, the Director shall either grant or deny the requested permit.

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

**Certification**

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The foregoing was duly enacted by the Spokane Tribal Business Council on the 30<sup>th</sup> day of April, 2013, by the vote of 3 for 0 against and 0 abstain under authority contained in Article VIII of the Constitution of the Spokane Indians ratified by the Spokane Tribe on November 22, 1980.

  
Chairman  
Spokane Tribal Business Council

	Yes	No	Abstain	Absent
RP	x			
RA				x
CW	x			
GA	x			
GH				x

CATHY McMORRIS RODGERS  
9th District, Washington  
REPUBLICAN CONFERENCE  
CHAIR  
DEPUTY WHIP  
COMMITTEE  
ENERGY AND COMMERCE  
SUBCOMMITTEE ON HEALTH

**Congress of the United States**  
**House of Representatives**

December 4, 2013

F\_016\_D\_A

CLERK  
ASST. CLERK  
COLUMBIA  
FERRY  
GARFIELD  
LINCOLN  
PERKINS  
SPOKANE  
STEVENS  
WALLA WALLA  
WHITMAN

Ms. Jean Reynolds  
AFCEC CZN  
2261 Hughes Avenue, Suite 155  
Lackland, TX 78236-9853

Dear Ms. Reynolds:

As Eastern Washington's representative in Congress, I want to express my support for basing the Air Force's new KC-46A aerial refueling tankers at Fairchild Air Force Base in Spokane, Washington.

I believe Fairchild's strategic location, combined with its core strengths in capacity and the well-established association between the Air Force's 92<sup>nd</sup> Air Refueling Wing and the Air National Guard's 141<sup>st</sup> Air Refueling Wing, make it an ideal home for the new KC-46A tankers. Additionally, the Spokane community has demonstrated strong support for Fairchild and is actively taking steps to ensure that Fairchild's mission can continue for years to come.

A vibrant and active base, Fairchild is vital to our nation's aerial refueling effort and to achieving global-level reach for the Air Force. The only base west of the Rocky Mountains to be considered for the first Main Operating Base for the KC-46A refueling tankers, Fairchild serves as a gateway to the Pacific Rim. As such, with the Department of Defense rebalancing towards the Asia-Pacific region, Fairchild is the best positioned candidate base to support the spectrum of bilateral and multilateral training exercises, as well as possible contingency operations, in U.S. Pacific Command's area of responsibility.

Possessing much of the needed capacity to accommodate the new KC-46A tanker, the Air Force continues to recognize Fairchild's strategic value with a sustained campaign of infrastructure investments totaling more than \$400 million in the last several decades. These investments include an improved 14,000 foot runway, a new, state-of-the-art fitness center, and updated SERE facilities. Additionally, a new wing command headquarters designed to better integrate Fairchild's active-duty Airmen and Air National Guardsmen is currently under construction.

Over time, the aviation missions at Fairchild have been complemented by the development of the Air Force Survival School, the Joint Personnel Recovery Center, and most recently, a unique association between the Air Force's 92<sup>nd</sup> Air Refueling Wing and the Washington State Air National Guard's 141<sup>st</sup> Air Refueling Wing.

As an Air National Guard Wing, the 141<sup>st</sup> Air Refueling Wing has dual missions. First, through the Washington Adjutant General, this wing has a state mission to provide protection to life and

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A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)

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property and preserve peace. Second, the Air National Guard Wing has a federal mission to train, equip, and deploy forces to locations worldwide in support of specific contingency operations.

The association between the 92nd and 141st Air Refueling Wings marries the best the active duty and reserve components have to offer, providing world leadership in aerial refueling, airlift and aeromedical evacuation capabilities while fostering innovation and efficiency in operation. Additionally, Fairchild, as a base with a thoroughly developed, high-performing association between the Air Force and the Air National Guard, is the model for the entire Air Mobility Command.

The important community support that Fairchild established in 1942 when the City of Spokane and local residents donated land for the base is alive today – with the community continuing to protect its servicemembers via the Joint Land Use Study and the Fairchild Air Force Base Protection and Community Empowerment Project which seeks to permanently reduce the residential density in Fairchild's Accident Potential Zone II.

With its strategic location and ability to support the Pacific rebalance, investments in infrastructure, unparalleled classic association of the 92<sup>nd</sup> Air Refueling Wing and 141<sup>st</sup> Air Refueling Wing, and strong community support, I believe Fairchild is an ideal home for the new KC-46A aerial refueling tankers.

Sincerely,

  
Cathy McMorris Rodgers  
Member of Congress



F\_017\_D\_A

NOV 19 2013

J. Dale Clark  
Chief, Air Force NEPA Center  
2261 Hughes Avenue, Suite 155  
JBSA Lackland, TX 78236-9853

Dear Mr. Clark:

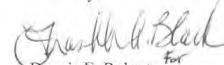
Thank you for your September 26 letter referencing the Draft Environmental Impact Statement for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown.

The Federal Aviation Administration (FAA) Airspace Services (AJV-1) has reviewed the KC-46A FTU and MOB 1 Draft Environmental Impact Statement and determined that the federal action described within the document does not involve changes in airspace or involve FAA action regarding airspace management. As such, AJV-1 has no comment.

AJV-1 has forwarded the link to the EIS website (<http://www.kc-46a-beddown.com/index.aspx>) which contains electronic copies of the document to the appropriate Air Traffic Organization Service Centers for their review. All comments will be provided electronically through the EIS website before the public comment period ends on December 9, 2012.

Thank you for providing this document to AJV-1 and we look forward to working with all of our Department of Defense partners in managing the National Airspace System.

Sincerely,

  
Dennis E. Roberts  
Director, Airspace Services  
Air Traffic Organization

A.7.3.4 Fairchild AFB Draft EIS Comments (Continued)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

F\_018\_D\_A

DEC 6 11

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Ms. Jean Reynolds  
USAF AFCEC/CZN  
2261 Hughes Avenue, Suite 155  
JBSA Lackland AFB, TX 78236-9853

Dear Ms. Reynolds:

In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Department of the Air Force's draft Environmental Impact Statement (EIS) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown (CEQ No. 20130301).

The draft EIS addressed the potential environmental effects of establishing a KC-46A FTU to train crew and support personnel to operate the KC-46A aircraft and the MOB 1 to provide a combat operational KC-46A aerial refueling force. The KC-46A aerial refueling aircraft will replace a portion of the aging fleet of KC-135 Stratotankers. The U.S. Air Force identified Altus Air Force Base (AFB) as the preferred alternative for the FTU scenario and McConnell AFB as the preferred alternative for the MOB 1 scenario. Altus AFB includes the beddown of one FTU squadron by Air Education and Training Command with up to eight KC-46A aircraft. McConnell AFB would be the beddown of three squadrons by the Air Mobility Command with 36 KC-46A aircraft.

EPA believes that the draft EIS provides an adequate discussion of the potential environmental impacts and we have not identified any potential environmental impacts requiring substantive changes. EPA has rated the draft EIS as LO – "Lack of Objections." A summary of EPA's rating is enclosed.

We appreciate the opportunity to review the draft EIS. The staff contact for the review is Candi Schaedle and she can be reached at [REDACTED].

Sincerely,

Susan E. Bromm  
Director  
Office of Federal Activities

Enclosure

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SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS date, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

A.7.3.5 Fairchild AFB Public Hearing Sign-In Sheets

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

LOCATION: FAIRCHILD AFB WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11/20/2013

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
JONES	DAVE	Retired USAF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
JONES	MARGARET	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Ramsing	Kjerstin	KITA			<input type="checkbox"/> I will download <input type="checkbox"/> CD
KELLEY	ROSS				<input type="checkbox"/> I will download <input type="checkbox"/> CD
HALVORSON	JACQUI	URS			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Weinard	Kathleen	City of Spokane			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Rushing	Patrick	Airway Heights			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Riosolan	Tama	Conner Connell			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

LOCATION: FAIRCHILD AFB WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11/20/2013

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Fandrich	Louise	Congresswoman McMorris-Rodgers			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Zehm	Larry	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
ELK	James	Cherry Tree Press			<input type="checkbox"/> I will download <input type="checkbox"/> CD
TWOTHIG	KEVIN	SPOKANE PFD			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MCDERMOTT	DANIEL	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
NEUMANN	ED	WEST KALAMAZOO			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD @ gmail.com
Hadley	Rich	GSI			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Savitz	Bill	GSI			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.5 Fairchild AFB Public Hearing Sign-In Sheets (Continued)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

LOCATION: Spokane Fairchild AFB WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11/20/2013

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Jayward	Sandra	Greater Spokane Inc			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Sawdy	Richard	Self Ret AF		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
McDaniel	Adam	City of Spokane		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
2 individuals	CB	did not sign		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Clark	Ed	Clark Company		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Wheat	Scott	Spokane Tribe		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Phillips	Jeff	BSI		<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD	
Spaid	PAT JR	USAF Ret 750		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hege	Michelle	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
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*A.7.3.6 Fairchild AFB Public Hearing Transcript*

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6 IN RE:  
7 KC-46A BEDDOWN PUBLIC COMMENT HEARING  
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11  
12  
13 WEDNESDAY, NOVEMBER 19, 2013, 5:30 p.m.  
14 Pages 1 to 38  
15  
16  
17 Jody K. Pope, CCR/RPR  
18 STOREY & MILLER COURT REPORTER  
19 Professional Court Reporters  
20 601 W. Riverside Avenue, Suite 1950  
21 Spokane, Washington 99201  
22 (509) 455-6931 Fax (509) 455-6994  
23 E-mail: [scheduling@storeyandmiller.com](mailto:scheduling@storeyandmiller.com)  
24 LIC. NO. WA 3114  
25

1  
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1 BY LT COL NATALIE RICHARDSON: Good evening, please  
2 take your seats, and if you have a cell phone or other  
3 electronic device, please silence it at this time. Some of  
4 you may have been speaking with representatives at the  
5 display boards. Time permitting, those representatives will  
6 be available on a break or after the hearing to continue any  
7 discussions.  
8 The time is 5:30 p.m., and we will now start the  
9 hearing. Thank you for attending this public hearing for  
10 the Draft Environmental Impact Statement or Draft EIS for  
11 the proposed formal training unit and first main operating  
12 Beddown of the KC-46A tanker aircraft. I'm Lieutenant  
13 Colonel Natalie Richardson, and I will be your hearing  
14 officer tonight. I am a judge advocate and an Airforce  
15 judge and will be acting as the moderator tonight. As the  
16 moderator, my role is to ensure the Air Force provides a  
17 fair, orderly and impartial hearing, where you have the  
18 opportunity to make comments on the proposal.  
19 I do not work for anyone at Air Mobility Command, the  
20 Air Force Civil Engineer Center, Air Education and Training  
21 Command, or any of the Air Force bases under consideration  
22 for the proposed action. I am not involved in any way with  
23 the development of this draft EIS, and I do not act as a  
24 legal advisor to the Air Force representatives working on  
25 this proposal.

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 This hearing is held in the accordance with the  
 2 provisions of the National Environmental Policy Act or NEPA,  
 3 as implemented by the Council on Environmental Quality  
 4 Regulations and the Air Force.  
 5 We are here tonight to present information on the  
 6 environmental impacts of the proposed KC-46A Beddown and to  
 7 take your comments on the draft EIS. Tonight's hearing is  
 8 one of several opportunities for public comment. This  
 9 hearing is an opportunity for you to express your views and  
 10 concerns about the adequacy about the environmental analysis  
 11 contained in the draft EIS, as well as any issues related to  
 12 the National Environmental Policy Act process.  
 13 This hearing is not a debate or a vote on the draft EIS,  
 14 and it is not a question and answer session. We welcome  
 15 your input on the environmental analysis presented in the  
 16 draft EIS. Comments about other unrelated issues can  
 17 certainly be made, but they will not assist in the decision  
 18 making process for the draft EIS.  
 19 I would like to begin this hearing by introducing the  
 20 NEPA team beginning with the Team Leader, Col. Todd Cargle,  
 21 with the Air Mobility Command, who will present details of  
 22 the proposed action and alternatives. Next is Ms. Jean  
 23 Reynolds, EIS project manager at the Air Force NEPA Center  
 24 who will discuss results of the NEPA process.  
 25 Representatives from Fairchild Air Force Base are also

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1 present, and although not a part of the analysis team, they  
 2 have provided detailed base information which is critical to  
 3 a thorough analysis of the impacts of this draft EIS.  
 4 Lastly, representatives from Leidos are here supporting  
 5 the Air Force as the contractor. Transcribing tonight's  
 6 hearing is Jody Pope, from Storey & Miller. I would also  
 7 like to recognize the following individuals present this  
 8 evening. Mayor of Airway Heights, Pat Rushing; the Eastern  
 9 Washington Outreach Director for Senator Maria Cantwell,  
 10 Tonya Rearden; the Deputy District Director for  
 11 Congresswoman Cathy McMorris Rodgers, Louise Fendrich; and a  
 12 representative for City Council President Ben Stuckart, Adam  
 13 McDaniel.  
 14 Thank you all for attending this evening. Colonel  
 15 Cargle will first present information on the proposed action  
 16 and the alternatives, then Mrs. Reynolds will provide an  
 17 overview of the NEPA process, and will summarize the  
 18 potential environmental consequences of the proposal. After  
 19 the presentations, which should take about 20 minutes, we  
 20 will take a break.  
 21 We will then begin our oral comment period at 6:15.  
 22 During that time, you can provide input on the proposed  
 23 action, draft EIS analysis, and potential environmental  
 24 impacts. Your comments will become part of the official  
 25 record of the final EIS. Please note that informal

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 discussions at our informational displays at the back of the  
 2 room will not become part of the EIS record. So if you have  
 3 items of concern about the analysis in the draft EIS that  
 4 you would like to bring to our attention, please do so  
 5 during our formal comment opportunity or in writing.

6 If you do not choose to make an oral comment, you can  
 7 submit written comments either by turning in a comment form  
 8 this evening or by mailing it to the address shown on the  
 9 screen. Comments may also be submitted on line at  
 10 [WWW.KC-46A-BEDDOWN.COM](http://WWW.KC-46A-BEDDOWN.COM). If you have not had a chance to  
 11 review the draft EIS, it is available at the website or at  
 12 one of the public libraries listed here.

13 The Air Force welcomes public comments in writing at any  
 14 time during the environmental impact analysis process. To  
 15 receive timely consideration for the final EIS, please  
 16 submit your comments by December 9, 2013. Your comments  
 17 will provide the decision-maker with information to assist  
 18 in making a decision regarding where the formal training  
 19 unit, or FTU, and First Main Operating Base, or MOB 1, will  
 20 be located. Your comments during this process provide the  
 21 benefit of your knowledge of the local area and your  
 22 concerns about the environmental impact or analysis.

23 We will now move on to the briefings. During the  
 24 briefings, our speakers will be reading from prepared  
 25 scripts. The briefings are written to make ceratin each

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1 speaker covers all pertinent information and that it is  
 2 consistent for all four hearings. With that, I will turn  
 3 the mic over to Colonel Cargle.

4 COL TODD CARGLE: Good evening and welcome. I am  
 5 Colonel Todd Cargle. I currently serve as the Chief of the  
 6 Programs Division within the Plans, Requirements, and  
 7 Programs Director at Headquarters Air Mobility Command,  
 8 Scott Air Force Base, Illinois. I'm a command pilot with  
 9 4,000 hours of experience in the building of aircraft,  
 10 including being an instructor and evaluator in the KC-135.

11 I've operated and led mobility forces in all facets of  
 12 the mission, including five combined deployments to  
 13 Afghanistan and Iraq. With that said, welcome to this  
 14 evening's meeting.

15 As a team leader, I encourage you to assist the Air  
 16 Force in meeting its requirements to comply with the NEPA  
 17 process. Your attention tonight indicates your interest in  
 18 this proposed action, and I hope your comments will provide  
 19 us with improvements or areas where further analysis is  
 20 needed. All comments will be properly reviewed, analyzed,  
 21 and addressed in the final EIS.

22 The purpose of the proposed action involves the KC-46A's  
 23 role in the Air Force Tanker Fleet Modernization effort.  
 24 The goal of this effort is to ensure future tankers are the  
 25 best available to support a high-threat, multi-role, war

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 fighting capability to commanders worldwide. To perform  
2 this mission, trained aircrews, maintenance, and support  
3 personnel must be available to meet KC-46A inventory  
4 delivery dates as older tanker aircraft are removed from  
5 inventory.

6 While we will continue to operate the legacy tanker  
7 fleet of aircraft, the KC-46A provides several advantages  
8 including, ability to refuel any fixed-wing certified  
9 aircraft on any mission, capable of refuelling multiple  
10 aircraft at once, increased airlift capability, receiver air  
11 refuelling, and improved force protection and survivability.

12 The Air Force is proposing to establish an FTU and the  
13 First Main Operating Base for the KC-46A aircraft along with  
14 required infrastructure and manpower at two active duty Air  
15 Force bases in the Continental United States. The FTU will  
16 train personnel to safely and effectively fly and operate  
17 KC-46A aircraft. The Operational MOB 1 Mission utilizes  
18 pilots, copilots, boom operators, and other support staff  
19 who operate and maintain aircraft to survive -- excuse me,  
20 maintain the aircraft, to provide worldwide refuelling,  
21 cargo, or aeromedical evacuation support.

22 The action alternative consists of two parts. The first  
23 part is the KC-46A FTU Beddown, which places up to eight  
24 KC-46A tanker aircraft for one squadron at one base. The  
25 second part of the action alternative is the selection of

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1 the first KC-46A MOB. This action places 36 KC-46A aircraft  
2 in three squadrons at one base.

3 The no-action alternative is required by NEPA and was  
4 evaluated at each proposed Beddown location to provide a  
5 baseline for decision-makers. The no-action alternative  
6 evaluates the environmental consequences of not basing the  
7 KC-46A aircraft at any base.

8 In the draft EIS, the Air Force analyzed the  
9 environmental consequences of basing the FTU at Altus Air  
10 Force Base in Oklahoma, or McConnell Air Force Base in  
11 Kansas. The Air Force also analyzed the environmental  
12 consequences of basing the MOB 1 at Altus Air Force Base in  
13 Oklahoma, Fairchild Air Force Base in Washington, Grand  
14 Forks Airforce Base in North Dakota, or at McConnell Air  
15 Force Base in Kansas.

16 In this action, no base would be selected to host both,  
17 the KC-46A FTU and MOB 1 missions. In May of this year, the  
18 secretary of the Air Force announced Altus Air Force Base as  
19 the preferred alternative for the KC-46A FTU. McConnell Air  
20 Force Base was selected as the preferred alternative for the  
21 first KC-46A main operating base. Fairchild and Grand Forks  
22 were announced as reasonable alternatives for the MOB 1.

23 This table summarizes the bases being considered for  
24 each KC-46A mission and how the existing missions could be  
25 impacted. The following slides summarize the aircraft

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 facilities and manpower changes anticipated to be required  
 2 to support the KC-46A mission.

3 If Altus Air Force Base is selected for the KC-46A FTU  
 4 or the MOB 1 mission, the existing KC-135 and C-17 missions  
 5 would remain and continue to operate. Implementation of the  
 6 FTU mission would require a variety of on-base development  
 7 projects, including demolition, new construction, and  
 8 renovation. The FTU mission would increase the area  
 9 population by approximately 578 people, including estimated  
 10 dependents, and would result in a 38 percent increase in  
 11 annual aircraft operations.

12 At each base, KC-46A aircrews would utilize the existing  
 13 KC-135 flight tracks, air refuelling tracks, and fuel  
 14 jettison areas if necessary. KC-46A aircrews associated  
 15 with the FTU would use the same four auxiliary airfields  
 16 that are currently being used by KC-135 aircrews. These  
 17 include Clinton-Sherman Industrial Air Park, Lubbock Preston  
 18 Smith International Airport, Fort Worth Alliance Airport and  
 19 Rick Husband Amarillo International Airport.

20 For the purposes of this draft EIS, Altus was evaluated  
 21 for the potential environmental impacts associated with MOB  
 22 1. Implementation of the MOB 1 mission would result in more  
 23 new construction, demolition, and renovation than the FTU  
 24 mission and would increase the population by approximately  
 25 4,917 people, including estimated dependents. Annual

9

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1 aircraft operations would also increase by approximately 31  
 2 percent. KC-46A aircrews associated with the MOB 1 at all  
 3 bases would not use auxiliary airfields.

4 Fairchild Air Force Base has been identified as an  
 5 alternative for the MOB 1 mission. If Fairchild is selected  
 6 to host the MOB 1 mission, the existing 30 KC-135 aircraft  
 7 would be replaced with 36 KC-46A aircraft. Implementation  
 8 of the MOB 1 mission would require a variety of on-base  
 9 development projects, including demolition, new  
 10 construction, and renovation. This mission would increase  
 11 the area population by approximately 1,095 people, including  
 12 estimated dependents, and would result in a 62 percent  
 13 increase in annual aircraft operations.

14 Grand Forks Air Force base has been identified as an  
 15 alternative for the MOB 1 mission. If Grand Forks is  
 16 selected to host MOB 1 mission, the existing remotely  
 17 piloted aircraft missions would continue and the KC-46A  
 18 mission would constitute an additional mission.

19 Implementation of the MOB 1 mission would require a  
 20 variety of on-base development projects, including  
 21 demolition, new construction, and renovation. This mission  
 22 would increase the area population by approximately 4,526  
 23 people, including estimated dependents, and would result in  
 24 a 226 percent increase in annual aircraft operations.

25 If McConnell Air Force Base is selected to host the MOB

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 1 mission, the existing 44, KC-135 aircraft would be  
2 replaced by 36 KC-46A aircraft. Implementation of the MOB 1  
3 mission would require a variety of on-base developmental  
4 projects including demolition, new construction, and  
5 renovation. This mission would decrease the area population  
6 by approximately 291 people, including estimated dependents,  
7 and would result in a 24 percent increase in annual aircraft  
8 operations.

9 For the purposes of this draft EIS, McConnell Air Force  
10 Base was evaluated for the potential environmental impacts  
11 associated with implementation of the FTU mission. This  
12 evaluation was conducted under the assumption that the  
13 existing KC-135 mission would remain in place.

14 Implementation of the FTU mission would result in less  
15 new construction, demolition, and renovation than the MOB 1  
16 mission and would increase the population by approximately  
17 570 people, including estimated dependents. Annual aircraft  
18 operations would also increase by approximately 107 percent.

19 KC-146A aircrews associated with the FTU would also use  
20 three auxiliary airfields that are currently being used by  
21 KC-135 aircrews. These include Clinton-Sherman Industrial  
22 Air Park, Forbes Field, and Wichita Mid-Continent Airport.

23 We would like to emphasize that although preferred  
24 alternatives for the FTU and MOB 1 have been announced, no  
25 final decision has been made on basing either of the two

11

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1 KC-46A missions currently under analysis in the draft EIS.  
2 We look forward to input provided from the public and  
3 affected communities as we proceed through the Environmental  
4 Impact Analysis. Once the requirements of the Environmental  
5 Impact Analysis process are complete, the Air Force will  
6 make its final basing decision.

7 Thank you for your attention, and I will now turn the  
8 presentation to Ms. Jean Reynolds, the Air Force Project  
9 Manager for the EIS to discuss the NEPA process and to  
10 provide greater detail on the potential impacts as described  
11 in the draft EIS.

12 MS. JEAN REYNOLDS: Good evening. I am Jean Reynolds,  
13 the Air Force NEPA Center Project Manager for the analysis  
14 of this proposed action. I'm here tonight to discuss the  
15 results of the environmental impact analysis for the  
16 proposal presented by Colonel Cargle. The draft EIS has  
17 been prepared in accordance with the requirements of NEPA,  
18 which requires federal agencies to analyze the potential  
19 environmental consequences of a proposed action, and  
20 reasonable alternatives, including a no-action alternative  
21 before any action is taken.

22 The goal of conducting the EIS is to support sound  
23 decisions through the assessment of potential environmental  
24 consequences, as well as involving the public in the  
25 process. The result of this analysis and other relevant

12

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 factors will be considered before a decision is made by the  
2 Air Force on this proposal. Your input during the past  
3 public scoping period and this public comment period will  
4 help the secretary of the Air Force make the most informed  
5 decision possible on this proposal.

6 As you can see on this slide, there are several key  
7 steps to the environmental impact analysis process. We are  
8 currently at the public and agency draft EIS review stage.  
9 This period began with the Federal Register publication of  
10 the notice of availability for the draft EIS. At that time,  
11 copies of the draft EIS were mailed to local libraries,  
12 states, and federal representatives and individuals who  
13 requested copies during the EIS scoping period.

14 The normal review period required by NEPA is 45 days.  
15 Our date for completion of the public comment period is 9  
16 December '13. The public hearings this week are being held  
17 in the same communities as the previous scoping meetings in  
18 order to provide the affected communities with the  
19 opportunity to comment on the draft EIS.

20 After the public comment period closes, we will review  
21 all comments received at the public hearings, through the  
22 mail, or electronically on our website, and use them to  
23 prepare the final EIS. Substantive comments will be  
24 reviewed and responded to in the final EIS.

25 The final EIS is scheduled to be released in March 2014.

13

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1 After the FINAL EIS Notice of Availability is published in  
2 the Federal Register, the Air Force must observe a waiting  
3 period of at least 30 days before signing the final record  
4 of decision to document which alternative the Air Force  
5 selects for implementation.

6 The draft EIS presents information on potential  
7 environmental consequences associated with implementing the  
8 FTU and MOB 1 missions at each of the four bases. The  
9 potential environmental consequences are grouped into five  
10 categories shown on this slide, and the subcategories  
11 represent the eleven resource areas evaluated at each base.

12 The next set of slides describes the potential  
13 environmental consequences at each of the four bases. For  
14 the purposes of this presentation, the potential  
15 environmental consequences at each base have been summarized  
16 in very broad terms. For a more detailed evaluation of the  
17 potential environmental consequences -- or for a more  
18 detailed evaluation, please refer to Chapter 4 of the draft  
19 EIS.

20 Implementation of the FTU mission at Altus would expose  
21 an additional 584 acres of off-base land and an estimated 17  
22 off-base residents to noise levels 65 decibels or greater.  
23 As is shown on the noise contour map, much of this land is  
24 located directly to the north and south of the runways.  
25 Noise resulting from the use of the four auxiliary airfields

14

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 is not anticipated to be noticeable. Other than the noise  
 2 increases, no other resource areas are anticipated to be  
 3 impacted by the FTU mission.

4 Implementation of the FTU mission would add up to 578  
 5 full-time military, dependents, and students to Jackson  
 6 County resulting in a 2.2 percent increase in the county  
 7 population. A variety of demolition, construction, and  
 8 renovation projects would be required for the FTU mission  
 9 resulting in positive economic impacts to Jackson County and  
 10 surrounding areas.

11 Implementation of the MOB 1 mission at Altus would  
 12 expose an additional 155 acres of off-base land and an  
 13 estimated 6 additional off-base residents to noise levels 65  
 14 decibels or greater. Because three squadrons are required  
 15 for the MOB 1 mission, substantially more construction,  
 16 demolition, and renovation would be required. Most notable  
 17 is the construction of the new ramp and apron area for  
 18 parking 15 additional aircraft. Implementation of the MOB 1  
 19 mission would add up to 4,917 full-time military and  
 20 dependents to Jackson County resulting in an 18.6 percent  
 21 increase in the county population. An increase of this  
 22 magnitude could result in traffic congestion near the base  
 23 and place additional strain on base infrastructure. No  
 24 other resource areas are anticipated to be impacted by the  
 25 MOB 1 mission.

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1 Implementation at Fairchild Air Force Base would expose  
 2 an additional 53 acres of off-base land and an estimated two  
 3 off-base residents to noise levels of 65 decibels or  
 4 greater. Implementation of the MOB 1 mission would add up  
 5 to 1,095 full-time military and dependents to Spokane  
 6 County, resulting in a 0.2 percent increase in the county  
 7 population.

8 One historic building, Hangar 2050, could be adversely  
 9 affected by the implementation of the MOB 1 mission.  
 10 Consultation with the Washington State Historic Preservation  
 11 office has been initiated and would be completed if  
 12 Fairchild is selected to host the MOB 1 mission. No other  
 13 consequences are anticipated for the MOB 1 mission at  
 14 Fairchild Air Force Base.

15 Implementation of the MOB 1 mission at Grand Forks Air  
 16 Force Base would expose an additional 62 acres of off-base  
 17 land. No off-base residents would be exposed to noise  
 18 levels 65 decibels or greater. The KC-46A parking plan was  
 19 specifically designed to minimize conflicts with the  
 20 existing Remotely Piloted Aircraft missions. In addition,  
 21 the FAA requires that air traffic control deconfliction of  
 22 remotely piloted aircraft and manned aircraft operating in  
 23 Class D airspace around Grand Forks Air Force Base.

24 Approximately two acres of potential wetlands could be  
 25 impacted by the proposed action. Should Grand Forks Air

16

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 Force Base be selected to host the MOB 1 mission, the Air  
 2 Force would work with the U.S. Army Corps of Engineers and  
 3 the North Dakota State Water Commission to determine if the  
 4 wetlands are subject to regulation and determine the  
 5 appropriate permit and potential mitigation requirements.  
 6 Implementation of the MOB 1 mission would add up to  
 7 4,526 full-time military and dependents to Grand Forks  
 8 County resulting in 6.8 percent increase in the county  
 9 population. No other consequences are anticipated for the  
 10 MOB 1 mission at Grand Forks Air Force Base.  
 11 Implementation of the MOB 1 mission at McConnell Air  
 12 Force Base would decrease the number of acres by 386, and  
 13 people by 199 exposed to noise levels of 65 decibels or  
 14 greater. Reduction in noise levels can be primarily  
 15 attributed to replacement of the 44 KC-135 aircraft with  
 16 only 36 slightly quieter KC-46A aircraft.  
 17 A substantial amount of construction, demolition, and  
 18 renovation would be required to implement the MOB 1 mission,  
 19 and the demolition building 1106 would result in an adverse  
 20 effect to this historic building. The Air Force is working  
 21 with the State Historic Preservation Office on a memorandum  
 22 of agreement to mitigate these effects. In addition, a  
 23 portion of the McConnell Creek Floodplain would be impacted  
 24 with the addition to building 1220.  
 25 To minimize potential impacts, construction designs

17

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1 would incorporate measures for construction in the  
 2 floodplain.  
 3 Implementation of the MOB 1 mission would result in a  
 4 slight 0.1 percent decrease of 291 full-time military and  
 5 dependents to Sedgwick County. This decrease is not  
 6 anticipated to negatively affect Sedgwick County. No other  
 7 resource areas are anticipated to be impacted by the MOB 1  
 8 mission.  
 9 Implementation of the FTU mission at McConnell Air Force  
 10 base would increase the number of acres by 273 and people by  
 11 594 exposed to noise levels of 65 decibels or greater. The  
 12 increase in noise levels is primarily attributed to the  
 13 addition of up to 8 additional aircraft on top of the  
 14 existing KC-135 mission. The additional areas affected by  
 15 noise are primarily located directly to the north and south  
 16 of the two runways.  
 17 A lesser amount of construction, demolition, and  
 18 renovation would be required to implement the FTU mission  
 19 and no historic structures would be affected.  
 20 Implementation of the FTU mission would result in a slight  
 21 0.2 percent increase of 570 full-time military, dependents,  
 22 and students to Sedgwick County.  
 23 No other resource areas are anticipated to be impacted  
 24 by the FTU mission.  
 25 This concludes my portion of the presentation, and I

18

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 thank you for your attention. I will now turn the floor  
2 back to Lt. Col. Richardson, who will provide you with the  
3 information on the second part of tonight's hearing, the  
4 public comment period.

5 LT. COL. NATALIE RICHARDSON: As I stated earlier,  
6 before we move to the public comments part of the hearing,  
7 we are going to take a break. We will start up again at  
8 6:15 with the formal comments. If you do want to make a  
9 formal comment and you have not already filled out a speaker  
10 form, you can go to the front, the registration table near  
11 the door where you came in, and fill out a card. So the  
12 hearing is in recess until 6:15.

13 (A recess was taken.)

14 PUBLIC COMMENTS

15 LT. COL. NATALIE RICHARDSON: Okay. The time is 6:15,  
16 and we will now begin the formal comment part of the  
17 hearing. If you have not filled out a white speaker card,  
18 but would like to speak, you can -- you can still go back  
19 out to the table or you can just raise your hand and someone  
20 will see you and bring you a card for you to fill out.

21 The way this will work is, I will call you by name, and  
22 I will also announce who is going to be next so you can be  
23 ready. After I call your name, please approach this  
24 microphone, and to help our stenographer here, please begin  
25 by spelling your name and spelling your last name, or your

19

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1 first, if it's particularly difficult. Also, if you're from  
2 or representing an organization, please state that as well,  
3 but please do not provide any other personal information  
4 such as your home address or your phone number.

5 Again, your comments are recorded verbatim, it will be  
6 used to develop a transcript and a permanent record of this  
7 meeting and will be published in the final EIS. Your name  
8 will be included, along with your comments. Personal home  
9 addresses and phone numbers will not be published in the  
10 final EIS.

11 The suggested time for each speaker is three minutes,  
12 and if you've gone significantly over the suggested time,  
13 then we do have a timekeeper who will hold up a yellow card  
14 when you've got about 30 seconds left and then a red card  
15 when your time is up. At that time, please conclude your  
16 comments about the proposed action and alternatives so that  
17 I can call on the next person.

18 There's no obligation to use all three minutes. You  
19 don't need to yield remaining time to anyone else. I will  
20 just call up the next person to speak. If you have any sort  
21 of other presentation you want to provide, please reduce  
22 that to writing and submit it as a written comment. The  
23 public comment period is set to end at 7:30, and the venue  
24 will be closed at 8:00. If everyone who has signed up to  
25 speak has had a chance to do so before 7:30, I will ask if

20

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 any speaker would like additional time to expand on your  
2 comments. If you would like to do that, just let me know  
3 and I will give you the mic.

4 If you want to add something later to your oral comments  
5 or if you would rather not speak here tonight, you can  
6 submit written comments. There is no page limit on written  
7 comments, and the Air Force gives equal weight to both oral  
8 and written comments. Both become part of the official  
9 record and are included in the final EIS.

10 Just a few reminders before we get started. Please  
11 limit your comments to the analysis in the draft EIS.  
12 That's, of course, the purpose of this public comment  
13 hearing. As I mentioned earlier, this is not a Q and A  
14 session. It's an opportunity for you to put on the record  
15 your views and concerns about the proposal that you want the  
16 decision-makers to consider.

17 Questions that you pose during your verbal testimony  
18 will become part of the record and will be considered.  
19 After we've completed the formal part of this hearing, Air  
20 Force representatives will be available for continued  
21 discussion.

22 I have been provided cards with individuals who would  
23 like to speak. We are first going to invite elected  
24 officials or their representatives to speak, followed by  
25 others who have signed up to speak. The first speaker will

21

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1 be Pat Rushing, followed by Adam McDaniel, and just a  
2 reminder, please state your name and spell your last name.  
3 MR. PAT RUSHING: Good evening, NEPA Team. Welcome to  
4 Spokane. We're happy you're here. My name is Patrick  
5 Rushing, R-u-s-h-i-n-g. I am the mayor of Airway Heights,  
6 Washington. While reviewing the draft EIS, I noticed that a  
7 lot of the reference was made to the Spokane County Joint  
8 Land Use Study or the JLUS.

9 Just for your information, the City of Airway Heights,  
10 Spokane City, the county, and Medical Lake, have all  
11 adopted, in one form or another, of the Joint Land Use  
12 Study. The City of Airway Heights is unique in ours because  
13 we had to take the Joint Land Use Study and incorporate a  
14 lot of the DOD directives from 2012 into that study, so that  
15 we now have what the JLUS implementation committee has  
16 deemed as the most protective of Fairchild Air Force Base  
17 for current and future missions.

18 The other thing I would like to say is that there are  
19 tornadoes in Wichita, Kansas, and in Oklahoma, and we don't  
20 have that here. We have pretty nice weather. So you might  
21 build some nice buildings down there and save a lot of  
22 money, but if you come to Spokane, you will actually save a  
23 lot of that money. We have buildings that are just now  
24 falling apart that were built back during World War II.

25 Again, thank you for coming and listening to my

22

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 comments.

2 LT. COL. NATALIE RICHARDSON: Thank you. The next

3 speaker is Adam McDaniel, to be followed by Scott Wheat.

4 MR. ADAM MCDANIEL: I'm Adam McDaniel, M-c-D-a-n-i-e-l.

5 I'm the senior executive assistant to Council President Ben

6 Stuckart and he was unable to make it tonight. He is out of

7 town. Spokane is a proud military city, from the local

8 World War II vet taking his Honor Flight back to our

9 nation's capitol to the SEARS student training for the first

10 time. We embrace our military like a seed, and we stand

11 ready to meet future expansion at Fairchild.

12 Our city is a strong regional partner that continues to

13 actively pursue ways to strengthen the bay and the

14 surrounding West Plains area. We will continue to advocate

15 for land use regulations consistent with Fairchild's

16 Compatible Use Zone Criteria. We are also proud to extend

17 to airman and their families educational, economic, and

18 cultural opportunities second to none, and our regional

19 infrastructure and transportation system has the capacity to

20 service the increase in base personnel.

21 The incredible integration of the 92nd Air Refuelling

22 wing and it's Air National Guard counterpart, the 141st Air

23 Refuelling wing, serves as a model for regional partnership

24 and as an integral piece of the partnership, the Spokane

25 City Council will remain dedicated to ensure the long-term

23

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1 viability of Fairchild, will remain steadfast in our belief

2 that the first KC-46A will land on our base runway. Thank

3 for your thorough selection process and for allowing our

4 citizens the opportunity to share their passion for

5 Fairchild on multiple occasions. Sincerely, Ben Stuckart.

6 LT. COL. NATALIE RICHARDSON: Thank you. The next

7 speaker I would like to welcome to the podium from the

8 Spokane Tribal Council is Scott Wheat, to be followed by

9 Margaret Jones.

10 MR. SCOTT WHEAT: Good afternoon, ladies and gentlemen.

11 My name is Scott Wheat, W-h-e-a-t. I am the tribe's lead

12 attorney, general counsel. On behalf of the Spokane Tribe,

13 through its tribal council, I want to welcome Air Force

14 staff here from various parts of the country, I would

15 imagine both military and civilian. We want to welcome you

16 to the tribe's aboriginal homelands.

17 In fact, Fairchild Air Force Base, the tribe has a deep

18 connection to that piece of ground. It lies within five

19 miles of the 1851 Battle of Four Lakes between the Spokane

20 Tribe and the U.S. Army. And as a matter of fact, the site

21 lies within the field of battle for the September 5th, 1858

22 Battle of Spokane Plains. Although, these days, and for a

23 very long time, they have been on peaceful terms with the

24 United States and the Armed Forces.

25 And I would like to mention that the tribe and its

24

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 members have a very high rate of military service, as is not  
 2 uncommon with Indian tribes, including service in the United  
 3 States Air Force. And we have enjoyed a very strong,  
 4 positive relationship with Fairchild Air Force Base  
 5 historically. We've testified to support, you know, keeping  
 6 the base open. But not only does the tribe have historic  
 7 connections to that area, we have modern connections as  
 8 well. We own 145 acres of land within a couple of miles of  
 9 the base and we have economic operations on that piece of  
 10 ground and we work closely with the base to ensure that our  
 11 operations are consistent and do not interfere with the  
 12 important military operations that occur at Fairchild.

13 We, too, participated in the development of the JLUS  
 14 policies, and as with other local jurisdictions, the tribe  
 15 has adopted and implemented the JLUS that will apply to all  
 16 development within that 145 acre piece. That is one of the  
 17 things that we noted in our review of the EIS that we  
 18 certainly wanted to include, and we will supplement or  
 19 include in our written testimony, which we will submit by  
 20 the deadline, the tribe's copy of its JLUS ordinance. And  
 21 we would appreciate if the EIS could be supplemented to  
 22 reflect the tribe, as a local government, has also enacted  
 23 land use regulations consistent with JLUS policies and  
 24 recommendations.

25 Finally, I'm sure my three minutes is coming up quick,

25

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1 also in our review of the EIS, and we wanted to comment  
 2 tonight, it's very appropriate that, as I identified the  
 3 tribe as the resident tribe to be contacted to ensure that  
 4 any cultural resources are appropriately cataloged and  
 5 protected pursuant to relevant federal law, NEPA, etc.

6 So we certainly stand willing and ready to assist the  
 7 base in assessment of those impacts, if that need arises in  
 8 the future. I do want to echo Mayor Rushing's learned and  
 9 sacred advice, that we do rarely, rarely have tornados in  
 10 this part of the country. We would certainly hope that the  
 11 base, the Air Force keeps an open mind. We know a preferred  
 12 alternative has been selected, but of course, that's not  
 13 really why you all are here tonight.

14 Our review of the EIS, we concur with the assessment and  
 15 impacts and affected environment. So with that, I will  
 16 conclude. Thank you very much for this opportunity to  
 17 testify.

18 LT. COL. NATALIE RICHARDSON: Thank you for your  
 19 comments. The next speaker is Margaret Jones to be followed  
 20 by Dave Jones.

21 MS. MARGARET JONES: Margaret Jones, spelled J-o-n-e-s.  
 22 I find your presentation of interest in what it leaves out,  
 23 rather than what it includes. If I were to use your  
 24 presentation to make a decision tonight, Fairchild would be  
 25 number one because it doesn't have any of the environmental

26

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 mitigation situations that are at McConnell, nor does it  
 2 have the environmental situations of climate that you have  
 3 in Altus or at McConnell.

4 One thing that you have failed to mention in this is  
 5 that Fairchild is the best kept secret in the Air Force.  
 6 Every person who's ever served at Fairchild has fallen in  
 7 love with the area because it provides a lifestyle for all  
 8 of them. If you're a fisherman, it's there. If you're a  
 9 hunter, it's there. If you want to play golf, it's there.  
 10 If you want to go to college football games, it's there. We  
 11 have one of the top-rated football teams in the nation right  
 12 here at Eastern. We have the top rated basketball team at  
 13 Gonzaga.

14 These you did not include in this. Of course, it's not  
 15 part of the environment, but as a member of two county  
 16 boards, I can tell you that for transportation needs, the  
 17 STA will provide whatever you need, including ride share,  
 18 which is one of their programs, plus they have a paratransit  
 19 for anyone that needs paratransit.

20 I can also tell you if there's any hazardous problems,  
 21 that we have the state-of-the-art hazard waste people  
 22 working right here with the Waste to Energy Plant, and at  
 23 SIA. We are ready and willing to do whatever is necessary  
 24 to support Fairchild. However, you do leave us a little bit  
 25 in limbo because we can't figure out whether we need to tax

27

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1 ourselves to do some things or not because we can't get a  
 2 straight answer from the Air Force as to what direction  
 3 you're going.

4 LT. COL. NATALIE RICHARDSON: Thank you. The next  
 5 speaker that I welcome to the podium is Dave Jones, and to  
 6 be followed by Sandra Jarrard.

7 MR. DAVE JONES: Dave Jones, J-o-n-e-s. I am a retired  
 8 colonel base commander at Fairchild. I would like to  
 9 mention just a couple of quick things. I won't take long.  
 10 One, and which was not discussed here, there's no runway  
 11 requirements. We have a brand new runway. We have  
 12 excellent taxiways. They've been fixed, too. All of which  
 13 were not so good 40 years ago, but they're all very good  
 14 now.

15 Yes, we have an old hangar. It was built way back when  
 16 this was the primary experimental base for SAC when they  
 17 conducted their annual bomb comp, and constantly, we had to  
 18 refuel up to 100 aircraft simultaneously. As a result, we  
 19 have the largest gasoline supply system in the Air Force  
 20 here at Fairchild. So I think a lot of things weren't  
 21 considered. The other thing is I know all the other bases.  
 22 And the Tornado Alley has hit Altus and it's McConnell in  
 23 the past. It just hit Illinois, which it almost never hits.

24 The thing is, and at one time when I was around, it hit  
 25 Sheppard, which they said, Oh, it will never hit Sheppard.

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### A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)

1 We didn't even have an alarm for it, and it came through and  
2 cleaned out the whole warehouse. The thing is, tornadoes  
3 are disastrous to aircraft as we've seen just recently. I  
4 think that alone makes it questionable, that decision. The  
5 one up north is not a very good place to put this kind of  
6 business. I can understand why they chose McConnell to a  
7 certain extent because it's in the center of the country,  
8 but our primary mission today, right this moment, in the  
9 long range is going to be in the Pacific. That's why its  
10 base was here, was to supply the Pacific.

11 We have traffic continuous out of here. However, with  
12 the tanker today, you can go all around the world, so you  
13 can put the tanker anywhere. You can put it in New York  
14 City if you wanted to, but I don't advise it. Thank you.

15 LT. COL. NATALIE RICHARDSON: Thank you. The next  
16 speaker I would like to welcome to the podium is Sandra  
17 Jarrard to be followed by Pat Spino.

18 MS. SANDRA JARRARD: Good evening. Sandra Jarrard,  
19 spelled J-a-r-r-a-r-d, and I'm the director of Public  
20 Policy, Greater Spokane Incorporated. GSI supports  
21 Fairchild, and it strongly advocates for Fairchild Air Force  
22 Base to be the first base for the KC-46A tanker. Over the  
23 last 30 years, more than \$400 million has been invested in  
24 base infrastructure. The existing infrastructure combined  
25 with a history of modernization efforts provides for

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1 Fairchild Air Force Base to be the prime basing option.  
2 Also Fairchild's strategic location makes it a gateway to  
3 the Asia Pacific destinations, ideal for staging operations  
4 in support of the nation's global ability requirements.  
5 Our community supports Fairchild Air Force Base. We  
6 recognize the great economic impact it has in the region.  
7 It is the largest single site employer. We will continue to  
8 advocate to be the first base to receive KC-46A tankers.  
9 Thank you.

10 LT. COL. NATALIE RICHARDSON: Thank you. The next  
11 speaker I would like to welcome to the podium Technical  
12 Sergeant Retired Pat Spino, to be followed by Brigadier  
13 General Retired Jim McDevitt.

14 MR. PAT SPINO: Good evening, everyone. I'm Retired  
15 Tech Sergeant Pat Spino, Junior, and I was out here for ten  
16 years from '81 until January 31st, 1992 when I retired. And  
17 I'm -- I don't know if I've even seen a copy of the impact  
18 statement. I was reading what the issues are in the --  
19 excuse me -- the locations they've chosen for the tankers  
20 and various other items of interest. And basically, based  
21 off -- to my wife and I, it's a convenience to have our --  
22 mainly to get our medications filled out there and shopping  
23 like everybody else is, and if it closed, we would have to  
24 establish a mail order system with Tricare, which she just  
25 started doing, and so I can go through the VA.

30

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 And otherwise, it would require us going all the way  
 2 over to McChord, which would be the next closest base, to  
 3 get any items we need, any conveniences, and stuff like  
 4 that, but then that's kind of a long drive.  
 5 So that's about my -- That's my concern about that,  
 6 losing a convenience and a benefit that we all worked for  
 7 those many years that we put in, and I would hate to see it  
 8 go. So anyway, that's all I got to say on there. Thank  
 9 you.  
 10 LT. COL. NATALIE RICHARDSON: Thank you. The next  
 11 speaker I would like to welcome to the podium is General Jim  
 12 McDevitt to be followed by Rich Hadley.  
 13 GENERAL JIM McDEVITT: Thank you very much, team.  
 14 Welcome to Spokane, and part of the Inland Northwest. I'm  
 15 Jim McDevitt, M-c-D-e-v-i-t-t. I was in aircrew for five  
 16 years active duty and then 30 years in the Air National  
 17 Guard, the 141st Air Refuelling Wing. 22 years of those  
 18 flying years were flown off of Fairchild in the KC-135s. We  
 19 appreciate being number two, real close, but I think there  
 20 are a couple of things that maybe the study -- some of the  
 21 subjective things the study doesn't measure.  
 22 First of all, the 141st houses the 116th Air Refueling  
 23 Squadron, and I was proud to be commander of that for a  
 24 couple of years. It's the second oldest flying squad in the  
 25 country, a long, proud history and a great association, a

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1 classic association, with the active duty, a pace setter,  
 2 and a lot of things settle out of -- set a very, very high  
 3 standard for the Air National Guard for the tanker  
 4 community. I think that was highlighted from Desert Storm  
 5 going forward.  
 6 Another thing, and I know that that's measured, but I  
 7 don't really know that the spirit and the kind of  
 8 association and the kind of experience of the air crews  
 9 quite shows up. I mean, I had, when I was a squadron  
 10 commander, majors and lieutenant colonels, wheat ranchers,  
 11 doctors, lawyers, school teachers, with 25 to 28 years of  
 12 flying experience, tremendous experience, and tremendous  
 13 mentors to not only our younger guard members, but the  
 14 active duty.  
 15 The other thing, too, that I don't know that you know  
 16 and I don't know was brought up, is that I know when I was  
 17 commander of the flying squadron, we had two or three of our  
 18 guard pilots that were Boeing test pilots, Bob Kay, Mike  
 19 Miller, and several others. So not only did we have a  
 20 classic association with the active duty, we had a classic  
 21 association with Boeing. I've been retired for a couple of  
 22 years, several years, so I don't know what the composite of  
 23 the squadron is now. But I do know we have a great  
 24 relationship with Boeing company, and we've had, and still  
 25 have probably, some Boeing test pilots that are part of our

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 units. So thanks for all you do.

2 LT. COL. NATALIE RICHARDSON: Thank you. The next

3 speaker I would like to welcome to the podium is Rich

4 Hadley.

5 MR. RICH HADLEY: Thank you for this opportunity,

6 H-a-d-l-e-y. Do you want any more talk about tornadoes?

7 Oh, okay. So I would just say a couple of things. First,

8 the community has a history of support for Fairchild Air

9 Force Base, and frankly, for the military, that goes back a

10 long way. The organization that I represent, which was the

11 J Bird, is now Greater Spokane Incorporated, of which I'm

12 the CEO, actually helped raise the \$15,000 dollars to buy

13 the -- to create the air depot with the war department back

14 in the '40s right at the end of World War II to establish an

15 air depot. Then we raised \$140,000 dollars to buy 1,400

16 acres to give to the Air Force to create what became Geiger

17 and then now Fairchild Air Force Base, and the Air Force

18 bought the rest of the property to get us to about 5,000

19 acres.

20 So I think we ought to get points for that, you know. I

21 think if you put \$140,000 in the 1940s and do all the

22 figuring, what's that worth, probably a billion dollars of

23 support? Anyway, but we've also supported ever since then,

24 modernization of the base, and you've heard that mentioned,

25 and I think that's really important because we're able,

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1 we're able to house those tankers, new tankers. We have

2 most of the hangar capacity, we have all hydro capacity, we

3 have the ramp. We have the new operations facilities for

4 the squadrons that have all been a part of the United States

5 Government and congress helping us have.

6 We have a brand new runway, and when this was runway was

7 down, the airplanes went to Spokane International Airport

8 and Moses Lake, the old Clark Air Force Base to -- that

9 wasn't Clark. Larson Air Force Base, and it was seamless to

10 be able to continue the mission while also putting in a new

11 runway.

12 In addition new facilities for airman, fitness center,

13 education center, and great relationships with the

14 community, including Operation Spokane Heros for the

15 families of deployed military personnel and for those

16 deployed. Our mission is central air mobility commander,

17 education training command, the number one survival school,

18 obviously, the joint personnel recovery center for the

19 governmental officials training in survival, so we have all

20 of that. It's a great facility for a survival education, as

21 well as training and obviously refuelling.

22 Mr. McDevitt talked about the unique relationship

23 between the Air National Guard and the active duty, which

24 honestly, we felt probably would have gotten more

25 recognition in the evaluation than it did given that the Air

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*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 Force put a huge priority on that along with joint basing.  
 2 And we have the Army Reserve Center now at the base, looking  
 3 at border patrol and looking at a many other missions that  
 4 happen in a region that represents two million people, so  
 5 that's important. The strategic location's been mentioned,  
 6 the Pacific pivot pointing towards the coast. I happen to  
 7 be on the civic leader group for the chief of staff of the  
 8 Air Force and the secretary of the Air Force, we've had that  
 9 discussion, and we're on the refuelling routes to the  
 10 Pacific.

11 We're the Noble Eagle -- we're the only ones flying the  
 12 Noble Eagle to protect us from what we don't want to have  
 13 happen ever in this world. We're important for that, as  
 14 well as being the refueling base for most of the Western  
 15 United States. We're close to Boeing, we're just down the  
 16 road. It would have been so easy for Boeing to be able to  
 17 -- I realize Boeing has facilities in Kansas as well -- but  
 18 building the tankers in Everett and then making -- having  
 19 the engineers to be able to be over here as they went  
 20 through the testing and the ops made way too much sense, I  
 21 know, but I think that was the big advantage we had.

22 You've heard about natural resources, natural disasters,  
 23 so we're the sixth safest community in the world -- in the  
 24 country, maybe the world. We don't have hurricanes either,  
 25 so we don't have floods, we don't have hurricanes, we don't

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1 -- Oh, yeah, did we mention tornadoes yet? We don't have  
 2 tornadoes, and so far we haven't has dust storms, so I think  
 3 we're in good shape on that, too. I would just say we're  
 4 proud of this base, and the community shows it all the time,  
 5 24/7. It really is. And I'm not trying to make light of  
 6 it, but at the end of the day, for all of us and for you,  
 7 I'm sure, we enjoy the fact that there's a lot of passion  
 8 and emotion in the people that live here.

9 We're the ninth favorite community in the country to  
 10 retire in, and for the military, the Air Force, we're number  
 11 two. So there's a lot at stake here. We're happy to be --  
 12 we would love to be number one, we should have been number  
 13 one, we are close to number one, and if the EIS proves out  
 14 that your number one choice, there's a flaw there other than  
 15 tornadoes, we will be happy to step in. We're ready to go.  
 16 We can do it, and you will never see a community stand up to  
 17 support this more than this community will. Thank you.

18 LT. COL. NATALIE RICHARDSON: Thank you. The public  
 19 comment period is scheduled to end at 7:30. I believe we've  
 20 heard from everyone who has signed up to speak, but we still  
 21 have some time left. Is there anyone who has not spoken,  
 22 but would like an opportunity to do so? All right? Come up  
 23 to the podium and please state your name and spell your last  
 24 name, and if you're representing an organization, state that  
 25 as well.

36

—STOREY & MILLER COURT REPORTERS—  
 601 W. Riverside, Suite 1950, Spokane WA 99201 (509) 455-6931

*A.7.3.6 Fairchild AFB Public Hearing Transcript (Continued)*

1 MR. ANDREW NEUNHERZ: Good evening. I'm Andrew  
2 Neunherz, N-e-u-n-h-e-r-z. I have been on all sides of the  
3 issue. I'm a retired Air Force officer with 27 years of  
4 service, retired in 1993, served five years at Fairchild.  
5 I'm a retired banker here in Spokane after about 15 years of  
6 work in that effort, the past president of the West Plains  
7 Chamber of Commerce, and currently the vice chair of the  
8 Spokane County Planning Commission. What does all this say?  
9 It gives me the ability to say that Spokane, Fairchild, is  
10 the right place, it's the right time, and it's the right  
11 community to take on the added mission of a new tanker.  
12 We're ready for it.

13 When I was here stationed with Colonel Jones at  
14 Fairchild back in the '70s, the community was ready then.  
15 The community has been supportive from day one. It is  
16 supportive every day, and while I apparently have not been  
17 able to keep my svelte figure as the general and the  
18 colonel, I was at one time skinnier and 6 foot 2. Everybody  
19 said everything, it's all been said, but now is the time.  
20 Fairchild is the place. Thank you for the opportunity to  
21 speak.

22 LT. COL. NATALIE RICHARDSON: Thank you. Is there  
23 anyone else who has not spoken, but would like an  
24 opportunity to do so at this time? For those of you who  
25 have spoken, are there any of you who want some more time to

37

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1 make some comments? Okay. We have no remaining speakers,  
2 and as I mentioned earlier, Air Force representatives will  
3 continue to be available out by the display boards to  
4 continue discussions. But let me remind you that any  
5 discussions that take place at the boards will not be part  
6 of the official record of this EIS.

7 Okay. I thank you for your time and interest. Tonight  
8 is not the end of your opportunity to participate in the  
9 environmental review process. Again, written comment sheets  
10 are available at the registration table. You can turn these  
11 sheets in tonight or mail them later. If you would like a  
12 copy, rather your own copy of the final EIS, please let one  
13 of the representatives at the three registration tables know  
14 or send a letter or postcard asking for your own copy. The  
15 Air Force will send copies of the final EIS to you.

16 There being no more speakers at this point, the hearing  
17 is adjourned until 7:30 unless we're earlier reconvened. So  
18 at this point, this hearing is in recess, and I thank you  
19 for your attendance.  
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21  
22  
23  
24  
25

38

—STOREY & MILLER COURT REPORTERS—  
601 W. Riverside, Suite 1950, Spokane WA 99201 (509) 455-6931

## A.7.3.7 Grand Forks AFB Draft EIS Comments

G\_001\_D\_I

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN  
OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL  
IMPACT STATEMENT**
**Public Hearing Written Comment Form**

 For more information or to submit comments online, please go to: [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com)

PLEASE PRINT LEGIBLY.

 LOCATION: Grand Forks, ND DATE: 11/18/13

GFAFB has a long history as a Tanker Base  
that should be continued. The base location facilities,  
geographic location for the tanker mission and  
military friendly community make the base a  
perfect location for the KC-46.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

 Name: David Blumhry (USAF, Ret)

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

G\_002\_D\_O

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN  
OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL  
IMPACT STATEMENT**
**Public Hearing Written Comment Form**

 For more information or to submit comments online, please go to: [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com)

PLEASE PRINT LEGIBLY.

 LOCATION: Grand Forks, ND DATE: 18 Nov 13

We, the Grand Forks American Legion Post #6, are fully supportive  
of the initiative to bring the KC-46A Tanker aircraft to Grand Forks  
Air Force Base, ND. We recognize the professionalism and diversity  
the base's Aircrew bring to the community.  
Please note the noise contour you are using for Grand Forks AFB, ND is  
out of date since the Aircraft Landing Area (AAPA) is no longer attached  
to the runway. In addition this area is scheduled to be converted into an  
industrial park to support the Remotely Piloted Aircraft (CRPA) mission.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

 Name: Robert E. Greene, Commander

 Organization: Grand Forks American Legion Post #6

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.7 Grand Forks AFB Draft EIS Comments (Continued)



G\_003\_D\_A

ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
www.ndhealth.gov



October 14, 2013

Ms. Jean Reynolds  
United States Air Force  
AFCEC/CZN  
2261 Hughes Ave., Ste. 155  
JBSA Lackland, TX 78236-9853

Re: Draft EIS for the KC-46A Formal Training Unit and First Main Operating Base Beddown  
Grand Forks AFB, Grand Forks County, North Dakota

Dear Ms. Reynolds:

This department has reviewed the information concerning the above-referenced project submitted under date of September 26, 2013, with respect to possible environmental impacts.

This department believes that environmental impacts from the proposed construction will be minor and can be controlled by proper construction methods. With respect to construction, we have the following comments:

1. All necessary measures must be taken to minimize fugitive dust emissions created during construction activities. Any complaints that may arise are to be dealt with in an efficient and effective manner.
2. Care is to be taken during construction activity near any water of the state to minimize adverse effects on a water body. This includes minimal disturbance of stream beds and banks to prevent excess siltation, and the replacement and revegetation of any disturbed area as soon as possible after work has been completed. Caution must also be taken to prevent spills of oil and grease that may reach the receiving water from equipment maintenance, and/or the handling of fuels on the site. Guidelines for minimizing degradation to waterways during construction are attached.
3. Projects disturbing one or more acres are required to have a permit to discharge storm water runoff until the site is stabilized by the reestablishment of vegetation or other permanent cover. Further information on the storm water permit may be obtained from the Department's website or by calling the Division of Water Quality (701-328-5210).

The facility is currently covered by the NDPDES industrial storm water permit. The Department recommends reviewing whether storm water quality improvements can be incorporated as part of any development or redevelopment project. Check with local officials to be sure any local storm water management considerations are addressed.

Environmental Health  
Section Chief's Office  
701.328.5150

Division of  
Air Quality  
701.328.5168

Division of  
Municipal Facilities  
701.328.5211

Division of  
Waste Management  
701.328.5166

Division of  
Water Quality  
701.328.5210

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Ms. Jean Reynolds

2.

G\_003\_D\_A

October 14, 2013

4. All necessary measures must be taken to minimize the disturbance of any asbestos-containing material and to prevent any asbestos fiber release episodes. Any facility that is to be renovated or demolished must be inspected for asbestos. Notification of the Department's Division of Air Quality (701-328-5188) is required before any demolition. Removal of any friable asbestos-containing material must be accomplished in accordance with section 33-15-13-02 of the North Dakota air pollution control rules.
5. Noise from construction activities may have adverse effects on persons who live near the construction area. Noise levels can be minimized by ensuring that construction equipment is equipped with a recommended muffler in good working order. Noise effects can also be minimized by ensuring that construction activities are not conducted during early morning or late evening hours.
6. Many buildings constructed prior to 1978 have interior and exterior surfaces coated with lead-based paint. The Office of Housing and Urban Development (HUD), as well as other Federal Housing Authorities, have implemented requirements for reducing exposure to lead from lead-based paint. If the building receives Federal funding, these materials must be handled according to their requirements which may include the use of properly trained individuals for removal and disposal. If the building does not receive Federal funding, the lead-based paint should be properly handled to reduce or prevent exposing workers and building occupants to lead.

The department owns no land in or adjacent to the proposed improvements, nor does it have any projects scheduled in the area. In addition, we believe the proposed activities are consistent with the State Implementation Plan for the Control of Air Pollution for the State of North Dakota.

These comments are based on the information provided about the project in the above-referenced submittal. The U.S. Army Corps of Engineers may require a water quality certification from this department for the project if the project is subject to their Section 404 permitting process. Any additional information which may be required by the U.S. Army Corps of Engineers under the process will be considered by this department in our determination regarding the issuance of such a certification.

If you have any questions regarding our comments, please feel free to contact this office.

Sincerely,

L. David Glatt, P.E., Chief  
Environmental Health Section

LDG:cc  
Attach.

### A.7.3.7 Grand Forks AFB Draft EIS Comments (Continued)



ENVIRONMENTAL HEALTH SECTION  
Gold Seal Center, 918 E. Divide Ave.  
Bismarck, ND 58501-1947  
701.328.5200 (fax)  
www.ndhealth.gov



G\_003\_D\_A

G\_004\_D\_A

#### Construction and Environmental Disturbance Requirements

These represent the minimum requirements of the North Dakota Department of Health. They ensure that minimal environmental degradation occurs as a result of construction or related work which has the potential to affect the waters of the State of North Dakota. All projects will be designed and implemented to restrict the losses or disturbances of soil, vegetative cover, and pollutants (chemical or biological) from a site.

#### **Soils**

Prevent the erosion of exposed soil surfaces and trapping sediments being transported. Examples include, but are not restricted to, sediment dams or berms, diversion dikes, hay bales as erosion checks, riprap, mesh or burlap blankets to hold soil during construction, and immediately establishing vegetative cover on disturbed areas after construction is completed. Fragile and sensitive areas such as wetlands, riparian zones, delicate flora, or land resources will be protected against compaction, vegetation loss, and unnecessary damage.

#### **Surface Waters**

All construction which directly or indirectly impacts aquatic systems will be managed to minimize impacts. All attempts will be made to prevent the contamination of water at construction sites from fuel spillage, lubricants, and chemicals, by following safe storage and handling procedures. Stream bank and stream bed disturbances will be controlled to minimize and/or prevent silt movement, nutrient upsurges, plant dislocation, and any physical, chemical, or biological disruption. The use of pesticides or herbicides in or near these systems is forbidden without approval from this Department.

#### **Fill Material**

Any fill material placed below the high water mark must be free of top soils, decomposable materials, and persistent synthetic organic compounds (in toxic concentrations). This includes, but is not limited to, asphalt, tires, treated lumber, and construction debris. The Department may require testing of fill materials. All temporary fills must be removed. Debris and solid wastes will be removed from the site and the impacted areas restored as nearly as possible to the original condition.

From: Davis, Jeffrey (<mailto:jeffrey.davis@bia.gov>)  
Sent: Thursday, October 31, 2013 11:42 AM  
To: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Cc: Marilyn Bercier; Mark Herman  
Subject: Draft KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB1) Beddown EIS

Dear Ms. Reynolds:

Upon review of the Draft EIS, I have no comments to add to the document, however we would appreciate to be kept informed of future developments.

Best Regards,

Jeffrey Davis, Environmental Protection Specialist

Division of Environmental, Safety and Cultural Resource Management

Bureau of Indian Affairs, MC 208

115 4th Ave. SE, Suite 400

Aberdeen, SD 57401

Phone: 605-226-7656

Fax: 605-226-7757

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Waste Management  
701.328.5166

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A.7.3.7 Grand Forks AFB Draft EIS Comments (Continued)



U.S. Department  
of Transportation  
Federal Aviation  
Administration

G\_005\_D\_A

NOV 19 2013

J. Dale Clark  
Chief, Air Force NEPA Center  
2261 Hughes Avenue, Suite 155  
JBSA Lackland, TX 78236-9853

Dear Mr. Clark:

Thank you for your September 26 letter referencing the Draft Environmental Impact Statement for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown.

The Federal Aviation Administration (FAA) Airspace Services (AJV-1) has reviewed the KC-46A FTU and MOB 1 Draft Environmental Impact Statement and determined that the federal action described within the document does not involve changes in airspace or involve FAA action regarding airspace management. As such, AJV-1 has no comment.

AJV-1 has forwarded the link to the EIS website (<http://www.kc-46a-beddown.com/index.aspx>) which contains electronic copies of the document to the appropriate Air Traffic Organization Service Centers for their review. All comments will be provided electronically through the EIS website before the public comment period ends on December 9, 2012.

Thank you for providing this document to AJV-1 and we look forward to working with all of our Department of Defense partners in managing the National Airspace System.

Sincerely,

Dennis E. Roberts  
Director, Airspace Services  
Air Traffic Organization

G\_006\_D\_A

-----Original Message-----

From: Weispfenning, Linda L. [REDACTED]  
Sent: Monday, December 09, 2013 10:03 AM  
To: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Subject: KC-46A FTU and MOB 1 EIS Website request

Dear Ms. Reynolds:

The following comments are submitted regarding the Draft Environmental Impact Statement involving the KC-46 Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown.

Page 2-61, Paragraph 5, Line 3: The North Dakota state agency responsible for certification of Section 401 of the Clean Water Act is the North Dakota Department of Health and NOT the North Dakota State Water Commission as stated. If wetlands with a watershed greater than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer.

Page 4-75, Paragraph 1, Line 5: The North Dakota state agency responsible for certification of Section 401 of the Clean Water Act is the North Dakota Department of Health and NOT the North Dakota State Water Commission as stated. If wetlands with a watershed greater than 80 acres are drained or filled, a permit is required from the North Dakota State Engineer.

Sincerely,

Linda Weispfenning

ND State Water Commission

900 E. Blvd. Ave., Dept. 770

Bismarck, ND 58505

701-328-4967 (w)  
701-328-3696 (fax)

A.7.3.7 Grand Forks AFB Draft EIS Comments (Continued)



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

G\_007\_D\_A

DEC 6 11

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Ms. Jean Reynolds  
USAF AFCEC/CZN  
2261 Hughes Avenue, Suite 155  
JBSA Lackland AFB, TX 78236-9853

Dear Ms. Reynolds:

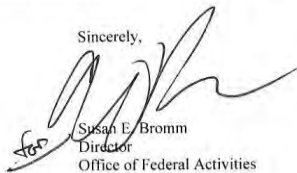
In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Department of the Air Force's draft Environmental Impact Statement (EIS) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown (CEQ No. 20130301).

The draft EIS addressed the potential environmental effects of establishing a KC-46A FTU to train crew and support personnel to operate the KC-46A aircraft and the MOB 1 to provide a combat operational KC-46A aerial refueling force. The KC-46A aerial refueling aircraft will replace a portion of the aging fleet of KC-135 Stratotankers. The U.S. Air Force identified Altus Air Force Base (AFB) as the preferred alternative for the FTU scenario and McConnell AFB as the preferred alternative for the MOB 1 scenario. Altus AFB includes the beddown of one FTU squadron by Air Education and Training Command with up to eight KC-46A aircraft. McConnell AFB would be the beddown of three squadrons by the Air Mobility Command with 36 KC-46A aircraft.

EPA believes that the draft EIS provides an adequate discussion of the potential environmental impacts and we have not identified any potential environmental impacts requiring substantive changes. EPA has rated the draft EIS as LO – "Lack of Objections." A summary of EPA's rating is enclosed.

We appreciate the opportunity to review the draft EIS. The staff contact for the review is Candi Schaeble and she can be reached at [REDACTED].

Sincerely,

  
Susan E. Bromm  
Director  
Office of Federal Activities

Enclosure

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SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS state, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

A.7.3.8 Grand Forks AFB Public Hearing Sign-In Sheets

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

LOCATION: Grand Forks WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11-18-13

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Slivnik	Kyle	319 CES/LEPD			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
TADORSKY	LARRY	NO Aeronautes			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Kiser	Matt	119th W.G. ANG			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Morley	MEG	Senator Heitkamp			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Greene	Robert	Grand Forks American Legion Post 6			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
FISK	Don	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
KOCHEVAK	RON	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Strom	Diane	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE


LOCATION: Grand Forks WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11-18-13

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
FLACK	TIM	319 11BW Public Affairs			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
BLUMKIN	Dan	Self (Ret USAF)			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
BROTHMAN	Jim	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
SAINTMONT	JEFF	69TH RB			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
BARTHOLOMEW	BRADEN	City of G.F.			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Nybladh	Larry	Grand Forks Public Sch			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Canarr	Leslie	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.8 Grand Forks AFB Public Hearing Sign-In Sheets (Continued)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




LOCATION: Grand Forks WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11-18-13

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
BREIDENBACH	STEVE	NODAK			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
MOORE	Michael	USD/ Base Configuration Impact Center			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Youngberg	Jerome	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Gebhardt	Larry	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**



LOCATION: Grand Forks WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11-18-13

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Enarson	mylo	Nordic Electric Cooperative			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Zimmerman	Delora	Petco Strategy Group			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
SARGUE	DAVID	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
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					<input type="checkbox"/> I will download <input type="checkbox"/> CD

*A.7.3.9 Grand Forks AFB Public Hearing Transcript*

13.11.18. Grand Forks transcripts.txt

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3 U.S. AIR FORCE  
4  
5 KC-46A BEDDOWN PUBLIC HEARING  
6  
7  
8  
9 November 18, 2013  
10 5:32 p.m.  
11  
12  
13  
14  
15  
16  
17  
18 HEARING LOCATION: Alerus Center  
19 Hawk Meeting Room  
20 1200 42nd Street South  
21 Grand Forks, ND 58201  
22  
23 HEARING OFFICER: Lieutenant Colonel  
24 Natalie Richardson  
25

REPORTER: Kerstin I. Haukebo

DOUG KETCHAM & ASSOCIATES

118 BROADWAY, SUITE 200, FARGO, ND 58102 (701) 237-0275

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1 THE HEARING OFFICER: Good evening. If you  
2 haven't already, can you please take your seat, and if  
3 you have a cell phone or other electronic device can you  
4 make sure to silence it or turn it off at this point.  
5 Some of you may have been speaking with  
6 Air Force representatives. Those representatives, time  
7 allowing, will be available on breaks or at the end of  
8 this hearing to -- for further discussion on the  
9 proposal.  
10 The time is a little after 5:30, and we will  
11 now start the hearing. Thank you for attending the  
12 public hearing of the draft environmental impact  
13 statement, or draft EIS, for the proposed formal  
14 training unit and first main operating base beddown of  
15 the KC-46A tanker aircraft.  
16 I'm Lieutenant Colonel Natalie Richardson, and  
17 I will be your hearing officer tonight. I'm an  
18 Air Force judge and will be acting as the moderator  
19 tonight.  
20 As the moderator, my role is to ensure that the  
21 Air Force provides a fair, orderly, and impartial  
22 hearing where you have the opportunity to make comments  
23 on the proposal.  
24 I do not work for anyone at Air Mobility  
25 Command, the Air Force Civil Engineer Center,

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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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1 Air Education and Training Command, or any of the  
2 Air Force bases under consideration for the proposed  
3 action.  
4 I am not involved in any way with the  
5 development of this draft EIS. Also, I do not act as a  
6 legal adviser to the Air Force representatives working  
7 on this proposal.  
8 This hearing is held in accordance with the  
9 provisions of the National Environmental Policy Act, or  
10 NEPA, as implemented by the council on environmental  
11 quality regulations and the Air Force. We are here  
12 tonight to present information on the environmental  
13 impacts of the proposed KC-46A beddown and to take your  
14 comments on the draft EIS.  
15 Tonight's hearing is one of several  
16 opportunities for public comments. This hearing is an  
17 opportunity for you to express your views and concerns  
18 about the adequacy of the environmental analysis  
19 contained in the draft EIS as well as any issues related  
20 to the National Environmental Policy Act process.  
21 This hearing is not a debate or a vote on the  
22 draft EIS, and it is not a question-and-answer session.  
23 We welcome your input on the environmental analysis  
24 presented in the draft EIS. Comments about other  
25 unrelated issues can certainly be made, but they will

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1 not assist the decision-making process for the  
2 draft EIS.  
3 I would like to begin this hearing by  
4 introducing the NEPA team, beginning with the team  
5 leader, Colonel Todd Cargle, with the Air Force Mobility  
6 Command, who will present details of the proposed action  
7 and alternatives.  
8 Next is Jean Reynolds, EIS project manager at  
9 the Air Force NEPA Center, who will discuss results of  
10 the NEPA process.  
11 Representatives from Grand Forks Air Force Base  
12 are present, and, although not part of the analysis  
13 team, they have provided detailed-based information,  
14 which is critical to a thorough analysis of impacts in  
15 the draft EIS. Lastly, representatives from Leidos are  
16 here supporting the Air Force as the contractor.  
17 Transcribing tonight's hearing is  
18 Kerstin Haukebo, with Doug Ketcham & Associates, and I  
19 would also like to recognize Ms. Meg Morley from  
20 Senator Heitkamp's office.  
21 Colonel Cargle will first present information  
22 on the proposed action and the alternatives. Then  
23 Ms. Reynolds will provide an overview of the NEPA  
24 process and will summarize the potential environmental  
25 consequences of the proposal.

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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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1 After their presentations, which should take  
2 about 20 minutes, we are going to have a short break,  
3 probably until 6:15. At 6:15 we will begin our oral  
4 comment period, during which you can provide input on  
5 the proposed action draft EIS analysis and potential  
6 environmental impacts.  
7 Your comments will become part of the official  
8 record of the final EIS. Please note that informal  
9 discussions at our informational displays will not  
10 become part of the EIS record, so if you have items  
11 of -- items of concern about the analysis in the  
12 draft EIS that you would like to bring to our attention,  
13 please do so during our formal comment opportunity or in  
14 writing.  
15 If you do not choose to make an oral comment,  
16 you can submit written comments, either by turning in a  
17 comment form this evening or by mailing it to the  
18 address shown on the screen.  
19 Comments may also be submitted online at  
20 [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com). If you have not had a chance to  
21 review the draft EIS, it is available on the web site or  
22 at one of the public libraries listed here.  
23 The Air Force welcomes public comments in  
24 writing at any time during the environmental impact  
25 analysis process. To receive timely consideration for

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1 the final EIS, please submit your comments by  
2 December 9, 2013.  
3 Your comments will provide the decision maker  
4 with information to assist in making a decision  
5 regarding where the formal training unit, or FTU, and  
6 first main operating base, or MOB 1, will be located.  
7 Your comments, during this process, provide the benefit  
8 of your knowledge of the local area and your concerns  
9 about the environmental impacts or analysis.  
10 We will now move into the briefings. During  
11 the briefings our speakers will be reading from prepared  
12 scripts. The briefings are written to make certain each  
13 speaker covers all pertinent information and that it is  
14 consistent for all four hearings. And, with that, I'll  
15 turn the mike over to Colonel Cargle.  
16 COLONEL CARGLE: Good evening and welcome. I'm  
17 Colonel Todd Cargle. I currently serve as the chief of  
18 the programs division, within plans, requirements, and  
19 programs directorate, at Headquarters Air Mobility  
20 Command, Scott Air Force Base, Illinois.  
21 I'm a command pilot, 4,000 hours experience in  
22 mobility aircraft, including being an instructor and an  
23 evaluator in the KC-135. I've operated and led mobility  
24 forces in all facets of the mission, including five  
25 combined deployments to Afghanistan and Iraq.

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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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1 That being said, welcome to this evening's  
 2 meeting. As the team leader I encourage you to assist  
 3 the Air Force in meeting its requirements to comply with  
 4 the NEPA process.

5 Your attendance tonight indicates your interest  
 6 in this proposed action, and I hope your comments will  
 7 provide us with improvements or areas where further  
 8 analysis is needed. All comments will be properly  
 9 reviewed, analyzed, and addressed in the final EIS.

10 The purpose of the proposed action involved the  
 11 KC-46A's role in the Air Force tanker fleet  
 12 modernization effort. The goal of this effort is to  
 13 ensure future tankers are best available to support a  
 14 high-threat, multi-role war-fighting capability to  
 15 commanders worldwide.

16 To perform this mission, trained aircrews,  
 17 maintenance, and support personnel must be available to  
 18 meet KC-46A inventory delivery dates as older tanker  
 19 aircraft are removed from the inventory.

20 While we will continue to operate the legacy  
 21 tanker fleet of aircraft, the KC-46A provides several  
 22 advantages, including ability to refuel any fixed-wing  
 23 aircraft on any mission, capable of refueling multiple  
 24 aircraft at once, increased airlift capability, receiver  
 25 air refueling, and improved force protection and

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1 survivability.

2 The Air Force is proposing to establish an FTU  
 3 and the first MOB for KC-46A aircraft, along with  
 4 required infrastructure and manpower, at two active-duty  
 5 Air Force bases in the continental United States.

6 The FTU will train personnel to safely and  
 7 effectively fly and operate KC-46A aircraft. The  
 8 operational MOB 1 mission utilizes pilots, copilots,  
 9 boom operators, and other support staff to operate and  
 10 maintain the aircraft to provide worldwide refueling,  
 11 cargo, or aeromedical evaluation support.

12 The action alternative consists of two parts:  
 13 The first part is the KC-46A FTU, which places up to  
 14 eight KC-46A tanker aircraft, for one squadron, at one  
 15 base.

16 The second part of the action alternative is  
 17 the selection of the first KC-46A MOB. This action  
 18 places 36 KC-46A aircraft in three squadrons at one  
 19 base.

20 The no-action alternative is required by NEPA  
 21 and was evaluated at each proposed beddown location to  
 22 provide a baseline for decision makers. The no-action  
 23 alternative evaluates the environmental consequences of  
 24 not basing the KC-46A aircraft at any base.

25 In the draft EIS the Air Force analyzed the

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1 environmental consequences of basing the FTU at  
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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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2 Altus Air Force Base in Oklahoma or McConnell Air Force  
3 Base in Kansas.

4 The Air Force also analyzed the environmental  
5 consequences of basing MOB 1 at Altus Air Force Base in  
6 Oklahoma, Fairchild Air Force Base in Washington,  
7 Grand Forks Air Force Base in North Dakota, or  
8 McConnell Air Force Base in Kansas. In this action no  
9 base will be selected to host both the KC-46A FTU and  
10 MOB 1 missions.

11 In May of this year the secretary of the  
12 Air Force announced Altus Air Force Base as the  
13 preferred alternative for the KC-46A FTU.  
14 McConnell Air Force Base was selected as the preferred  
15 alternative for the first KC-46A main operating base.  
16 Fairchild Air Force Base and Grand Forks Air Force Base  
17 were announced as reasonable alternatives for the MOB 1  
18 mission.

19 This table summarizes the bases being  
20 considered for each KC-46A mission and how the existing  
21 missions could be impacted. The following slides  
22 summarize the aircraft facilities and manpower changes  
23 anticipated to be required to support the KC-46A  
24 mission. If Altus is selected for the KC-46A FTU or the  
25 MOB 1 mission, the existing KC-135 and C-17 missions

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10

1 will remain and continue to operate.

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2 Implementation of the FTU mission will require  
3 a variety of on-base development projects, including  
4 demolition, new construction, or -- and renovation. The  
5 FTU mission would increase the area population by  
6 approximately 578 people, including estimated  
7 dependents, and would result in a 38 percent increase in  
8 annual aircraft operations.

9 At each base KC-46A aircrews would utilize the  
10 existing KC-135 flight tracks, air fueling tracks, and  
11 fuel jettison areas, if necessary.

12 KC-46A aircrews, associated with the FTU, would  
13 use the same four auxilliary airfields that are  
14 currently being used by KC-135 aircrews. These include  
15 Clinton-Sherman Industrial Airpark, Lubbock Preston  
16 Smith International Airport, Fort Worth Alliance  
17 Airport, and Rick Husband Amarillo International  
18 Airport.

19 For the purposes of this draft EIS, Altus was  
20 evaluated for the potential environmental impacts  
21 associated with MOB 1. Implementation of the MOB 1  
22 mission would result in more new construction,  
23 demolition, and renovation than the FTU mission and  
24 would increase the population by approximately 4,917  
25 people, including estimated dependents.

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11

1 Annual aircraft operation would also increase  
2 by approximately 31 percent. KC-46A aircrews associated  
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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 3 with MOB 1 and all of the bases will not use auxiliary  
 4 airfields.  
 5 Fairchild Air Force Base has been identified as  
 6 an alternative for the MOB 1 mission. If Fairchild is  
 7 selected to host the MOB 1 mission, the existing 30  
 8 KC-135 aircraft will be replaced with 36 KC-46A  
 9 aircraft.  
 10 Implementation of the MOB 1 mission would  
 11 require a variety of on-base development projects,  
 12 including demolition, new construction, and renovation.  
 13 This mission would increase the area population by  
 14 approximately 1,095 people, including estimated  
 15 dependents, and would result in a 62 percent increase in  
 16 annual aircraft operations.  
 17 Grand Forks Air Force Base has been identified  
 18 as an alternative for the MOB 1 mission. If Grand Forks  
 19 is selected to host the MOB 1 mission, the existing  
 20 remotely piloted aircraft missions would continue and  
 21 the KC-46A mission would constitute an additional  
 22 mission.  
 23 Implementation of the MOB 1 mission will  
 24 require a variety of on-base development projects,  
 25 including demolition, new construction, and renovation.

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1 This mission would increase the area population by  
 2 approximately 4,526 people, including estimated

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 3 dependents, and would result in a 226 percent increase  
 4 in annual aircraft operations.  
 5 If McConnell Air Force Base is selected as the  
 6 host -- excuse me -- if McConnell Air Force Base is  
 7 selected to host the MOB 1 mission, the existing 44  
 8 KC-135 aircraft would be replaced by 36 KC-46A aircraft.  
 9 Implementation of the MOB 1 mission would  
 10 require a variety of on-base development projects,  
 11 including demolition, new construction, and renovation.  
 12 This mission will decrease the area population by  
 13 approximately 291 people, including estimated  
 14 dependents, and would result in a 24 percent increase in  
 15 annual aircraft operations.  
 16 For the purposes of this draft EIS, McConnell  
 17 was evaluated for the potential environmental impacts  
 18 associated with implementation of the FTU mission. This  
 19 evaluation conducted -- was conducted under the  
 20 assumption that the existing KC-135 mission will remain  
 21 in place.  
 22 Implementation of the FTU -- of the FTU mission  
 23 would result in less new construction, demolition, and  
 24 renovation than the MOB 1 mission and would increase the  
 25 area population by approximately 570 people, including

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1 estimated dependents. Annual aircraft operations would  
 2 also increase by approximately 107 percent.

3 KC-46A aircrews associated with the FTU would  
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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 4 also use three auxiliary airfields that are currently  
 5 being used by KC-135 aircrews. These airfields include  
 6 Clinton-Sherman Industrial Airpark, Forbes Field, and  
 7 Wichita Mid-Continent Airport.  
 8 We would like to emphasize that, although  
 9 preferred alternatives for the FTU and MOB 1 have been  
 10 announced, no final decision has been made on basing  
 11 either of the two KC-46A missions currently under  
 12 analysis in the draft EIS.  
 13 We look forward to inputs provided from the  
 14 public and affected communities as we proceed through  
 15 the environmental impact analysis. Once the  
 16 requirements for the environmental impact analysis  
 17 process are complete, the Air Force will make its final  
 18 basing decision.  
 19 Thank you for your attention. I will now turn  
 20 the presentation over to Ms. Jean Reynolds, the  
 21 Air Force project manager for the EIS, to discuss the  
 22 NEPA process and provide greater detail on the potential  
 23 impacts as described in the draft EIS. Thank you.  
 24 MS. REYNOLDS: Good evening. I am  
 25 Jean Reynolds, the Air Force NEPA Center project manager

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 14

1 for the analysis of this proposed action. I'm here  
 2 tonight to discuss the result of the environmental  
 3 impact analysis for the proposal presented by

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 4 Colonel Cargle.  
 5 The draft EIS has been prepared in accordance  
 6 with the requirements of NEPA, which requires federal  
 7 agencies to analyze potential environmental consequences  
 8 of a proposed action and reasonable alternatives,  
 9 including a no-action alternative, before any action is  
 10 taken.  
 11 The goal of conducting an EIS is to support  
 12 sound decisions for the assessment of potential  
 13 environmental consequences as well as involving the  
 14 public in the process. The results of the analysis and  
 15 other relevant factors will be considered before a  
 16 decision is made by the Air Force on its proposal.  
 17 Your input, during the past public scoping  
 18 period and public comment period, will help the  
 19 secretary of the Air Force make the most informed  
 20 decision possible.  
 21 As you can see, on this slide, there are  
 22 several key steps to the environmental impact analysis  
 23 process. We are currently at the public and agency  
 24 draft review stage.  
 25 This period began with the federal register

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 15

1 publication of the notice of availability for the draft  
 2 EIS. At that time copies of the draft EIS were mailed  
 3 to local libraries, state and federal representatives,  
 4 and individuals who requested copies during the EIS  
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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 5 scoping period.  
 6 The normal review period required by NEPA is  
 7 45 days. Our date for the completion of the public  
 8 comment period is 9, December, '13. The public hearings  
 9 this week are being held in the same communities as  
 10 previous scoping meetings in order to provide the  
 11 affected communities with the opportunity to comment on  
 12 the draft EIS.  
 13 After the public comment period closes, we will  
 14 review all comments received at the public hearings,  
 15 through the mail, or electronically submitted on our  
 16 web site and use them to prepare the final EIS.  
 17 Substantive comments will be reviewed and responded to  
 18 in the final EIS.  
 19 The final EIS is scheduled to be released in  
 20 March 2014. After the final EIS notice of availability  
 21 is published in the federal register, the Air Force must  
 22 observe a waiting period of at least 30 days before  
 23 signing the final record of decision to document which  
 24 alternative the Air Force selects for implementation.  
 25 The draft EIS presents information on potential

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 16

1 environmental consequences associated with implementing  
 2 the FTU and MOB 1 missions at each of the four bases.  
 3 The potential environmental consequences are grouped  
 4 into five categories, shown on this slide, and the

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 5 subcategories represent the 11 resource areas evaluated  
 6 at each base.  
 7 The next set of slides describes the potential  
 8 environmental consequences of each of the four bases.  
 9 For the purpose of this presentation, the potential  
 10 environmental consequences under each base have been  
 11 summarized in only broad terms. For a more detailed  
 12 evaluation of the potential consequences, please refer  
 13 to chapter 4 of the draft EIS.  
 14 Implementation of the FTU mission at Altus  
 15 would expose an additional 584 acres of off-base land  
 16 and an estimated 17 off-base residents to noise levels  
 17 65 decibels or greater.  
 18 As is shown on the noise contour map, much of  
 19 this land is located directly north and south of the  
 20 runways. Noise resulting from the use of the four  
 21 auxiliary airfields is not anticipated to be noticeable.  
 22 Other than noise increases, no other resource areas are  
 23 anticipated to be impacted by the FTU mission.  
 24 Implementation of the FTU mission would add up  
 25 to 578 full-time military, dependents, and students to

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 17

1 Jackson County, resulting in a 2.2 percent increase to  
 2 the county population. A variety of demolition,  
 3 construction, and renovation projects would be required  
 4 for the FTU mission, resulting in positive economic  
 5 impacts to Jackson County and surrounding areas.

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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 6 Implementation of the MOB mission at Altus  
 7 would expose an additional 155 acres of off-base land,  
 8 an estimated six additional off-base residents, and  
 9 noise levels 65 decibels or greater.  
 10 Because three squadrons are required for MOB --  
 11 for the MOB 1 mission, substantially more construction,  
 12 demolition, and renovation would be required. Most  
 13 notable is the construction of new ramp and area apron  
 14 for parking 15 additional aircraft.  
 15 Implementation of the MOB mission would add up  
 16 to 4,917 full-time military and dependents to  
 17 Jackson County, resulting in an 18.6 percent increase in  
 18 county population.  
 19 An increase of this magnitude could result in  
 20 traffic congestion near the base and place additional  
 21 strain on base infrastructure. No other resource areas  
 22 are anticipated to be impacted by the MOB 1 mission.  
 23 Implementation of the MOB 1 mission at  
 24 Fairchild Air Force Base would expose an additional  
 25 53 acres of off-base land and an estimated two off-base

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 18

1 residents to noise levels 65 decibels or greater.  
 2 Implementation of the MOB mission would add up  
 3 to 1,095 full-time military and dependents to  
 4 Spokane County, resulting in a .2 percent increase in  
 5 county population.

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 6 One historic building, hangar 2050, could be  
 7 adversely affected by the implementation of the MOB 1  
 8 mission, and consultation with the Washington State  
 9 historic preservation officer has been initiated and  
 10 would be completed if Fairchild is selected to host the  
 11 MOB 1 mission. No other consequences are anticipated  
 12 for the MOB 1 mission at Fairchild Air Force Base.  
 13 Implementation of the MOB 1 mission at  
 14 Grand Forks Air Force Base would expose an additional  
 15 62 acres of off-base land. No off-base residents will  
 16 be exposed to noise levels 65 decibels or greater.  
 17 The KC-46A parking plan was specifically  
 18 designed to minimize conflicts with existing remotely  
 19 piloted aircraft missions. In addition, the FAA  
 20 requires that air traffic control deconfliction of  
 21 remotely piloted aircraft and manned aircraft operating  
 22 in class D airspace around Grand Forks Air Force Base.  
 23 Approximately 2 acres of potential wetlands  
 24 could be impacted by the proposed action should  
 25 Grand Forks be selected to host the MOB 1 mission. The

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 19

1 Air Force would work with U.S. Army Corps of Engineers  
 2 and the North Dakota State Water Commission to determine  
 3 if wetlands are subject to regulation and determine  
 4 appropriate permit and potential mitigation  
 5 requirements.

6 Implementation of the MOB 1 mission would add  
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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 7 up to 4,526 full-time military and dependents to  
 8 Grand Forks County, resulting in a 6.8 increase in the  
 9 county population. No other consequences are  
 10 anticipated for the MOB 1 mission at Grand Forks  
 11 Air Force Base.  
 12 Implementation of the MOB 1 mission at  
 13 McConnell Air Force Base would decrease the number of  
 14 acres by 386 and people by 199 exposed to noise levels  
 15 65 decibels or greater. The reduction in noise levels  
 16 can be primarily attributed to the replacement of the 44  
 17 KC-135 aircraft with only 36 slightly quieter KC-46A  
 18 aircraft.  
 19 A substantial amount of construction,  
 20 demolition, and renovation would be required to  
 21 implement the MOB 1 mission, and the demolition of  
 22 building 1106 would result in adverse impact to  
 23 historic -- to this historic building. The Air Force is  
 24 working with the state historic preservation officer on  
 25 a memorandum agreement to mitigate these effects.

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 20

1 In addition, a portion of McConnell Creek  
 2 floodplain would be impacted with the addition of  
 3 building 220 -- 1220. To minimize potential impacts,  
 4 construction designs would incorporate measures for  
 5 construction and floodplain.

6 Implementation of the MOB mission would result

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 7 in a slight .1 percent decrease of 291 full-time  
 8 military independents (sic) to Segima (phonetic) County.  
 9 This decrease is not anticipated to negatively affect  
 10 Segima County. No other resources are -- are  
 11 anticipated to be impacted by the MOB 1 mission.  
 12 Implementation of the FTU mission at  
 13 McConnell Air Force Base would increase the number of  
 14 acres by 273 people and 594 exposed to noise levels  
 15 65 decibels or greater.  
 16 The increase in noise levels is primarily  
 17 attributed to the addition of up to eight additional  
 18 aircraft on top of the existing KC-135 mission. The  
 19 additional areas affected by noise are primarily located  
 20 directly to the north and south of the two runways.  
 21 A lesser amount of construction, demolition,  
 22 and renovation would be required to implement the FTU  
 23 mission, and no historic structures will be affected.  
 24 Implementation of the FTU mission would result in a  
 25 slight .2 percent increase of 570 full-time military

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 21

1 dependents and students in Sedgwick County. No other  
 2 resources are anticipated to be impacted by the FTU  
 3 mission.

4 This concludes my portion of the presentation,  
 5 and I thank you for your attention. I'll now hand the  
 6 floor to Colonel Richardson, who will provide you  
 7 information on the second part of tonight's hearing.

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### A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)

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 8 THE HEARING OFFICER: Next is the public  
 9 comment part of the hearing, which is scheduled to begin  
 10 at 6:15.  
 11 For those wishing to speak, please fill out a  
 12 white speaker form that are available at the table near  
 13 the entrance to this room. If you have not filled one  
 14 out and you do want to speak, you can take this time,  
 15 during the break, to fill out a speaker card.  
 16 So the hearing will be in recess until 6:15.  
 17 (Recess was taken.)  
 18 THE HEARING OFFICER: All right. It is just  
 19 after 6:15, and we now begin the public comment part of  
 20 the hearing.  
 21 We do not have anyone signed up to make any  
 22 oral comments. If you would like to, you can raise your  
 23 hand and we'll get you a speaker form, or you can just  
 24 come on up and provide your comment.  
 25 If you would rather not speak here tonight, you

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 22

1 can submit your comments in writing. There's no  
 2 page limit -- limit on written comments, and the  
 3 Air Force gives equal weight to oral and written  
 4 comments. Both become part of the official record and  
 5 are included in the final EIS.  
 6 We are scheduled to have the public comment  
 7 period open until 7:30, and the venue is scheduled to be

Page 21

13.11.18. Grand Forks transcripts.txt  
 8 open until 8:00, so during this time, if you decide you  
 9 would like to make a public comment, either here, at the  
 10 podium, or just with the stenographer here, you can do  
 11 that, during this period, up to 7:30.  
 12 Before we go into a recess to await any oral  
 13 comments, I want to thank you for your time and interest  
 14 tonight. Tonight is not the end of the opportunity to  
 15 participate in the environmental review process. You  
 16 can either turn in your written comments tonight or you  
 17 can mail them later.  
 18 If you would like your own copy of the final  
 19 EIS, please let one of the representatives at the  
 20 registration table know or send a letter or postcard  
 21 asking for your own copy. The Air Force will send  
 22 copies of the final EIS to you.  
 23 This hearing is adjourned until 7:30 unless  
 24 earlier reconvened. Thank you.  
 25 (Concluded at 7:32 p.m.)

DOUG KETCHAM & ASSOCIATES

118 BROADWAY, SUITE 200, FARGO, ND 58102 (701) 237-0275  
 23

1 NOTARY REPORTER'S CERTIFICATE  
 2 STATE OF NORTH DAKOTA  
 3 COUNTY OF CASS  
 4 I, Kerstin I. Schiltz, a Notary Public within and for  
 5 the County of Cass and State of North Dakota do hereby  
 6 certify:  
 7 That the foregoing twenty-two (22) pages contain an  
 8 accurate transcription of my shorthand notes then and  
 Page 22

*A.7.3.9 Grand Forks AFB Public Hearing Transcript (Continued)*

13.11.18. Grand Forks transcripts.txt

9 there taken.

10 I further certify that I am neither related to any of  
11 the parties or counsel nor interested in this matter  
12 directly or indirectly.

13 WITNESS my hand and seal this 4th day of December,  
14 2013.

15

16 \_\_\_\_\_  
17 Kerstin I. Schiltz  
18 (Now known as Kerstin I. Haukebo)  
19 Notary Public  
20 Fargo, North Dakota

21 THE FOREGOING CERTIFICATION OF THIS TRANSCRIPT DOES  
22 NOT APPLY TO THE REPRODUCTION OF THE SAME BY ANY  
23 MEANS, UNLESS UNDER THE DIRECT CONTROL AND/OR  
24 DIRECTION OF THE CERTIFYING COURT REPORTER.

25

DOUG KETCHAM & ASSOCIATES

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♀

A.7.3.10 McConnell AFB Draft EIS Comments

M\_001\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**  
**Public Hearing Written Comment Form**  
For more information or to submit comments online, please go to: [www.kc-46A-beddown.com](http://www.kc-46A-beddown.com)

PLEASE PRINT LEGIBLY.  
LOCATION: \_\_\_\_\_ DATE: 11-12-2013

Keep THE UNIT IN WICHITA  
THE FACILITY IS BEST SITUATED

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: DENNIS DYE  
Organization: \_\_\_\_\_  
Address: \_\_\_\_\_  
City/State/Zip: WICHITA

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

M\_002\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**  
**Public Hearing Written Comment Form**  
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PLEASE PRINT LEGIBLY.  
LOCATION: WICHITA, KS DATE: 12 Nov 13

WE WILL BE HAPPY AND HONORED TO  
RECEIVE THE KC-46A TANKERS AT  
OUR BASE - McCONNELL AFB

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: JOHN ROBERTS  
Organization: ROBERTS FAMILY DENTISTRY  
Address: \_\_\_\_\_  
City/State/Zip: \_\_\_\_\_

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U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_003\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

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PLEASE PRINT LEGIBLY.

LOCATION: WICHITA KS DATE: 11/12/13

I AM STRONGLY IN SUPPORT OF THE FTU AND MOB 1 KC-46A TANKER BEDDOWN AT MCCONNELL AFB.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: TERESA RUPE

Organization: [REDACTED]

Address: [REDACTED]

City/State/Zip: [REDACTED]

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Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

M\_004\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

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PLEASE PRINT LEGIBLY.

LOCATION: MCCONNELL DATE: 11-12-13

The base has always been foremost considering the environment in all planning.  
No one thinks the planes are "noisy"  
Get roar - the sound of freedom

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: Johanne Pachan

Organization: Kansas Pilots Assoc.

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_005\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

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PLEASE PRINT LEGIBLY.

LOCATION: Wichita KS. DATE: 12 November 2013

I appear to me that Wichita would be least impacted environmentally than the other 3 locations. The environment is a big concern worldwide and this is a big plus for choosing McConnell AFB as a site for the FTU or MOB1 (preferably the MOB1).

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: William L Nestelroad

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

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Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
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JBSA Lackland AFB, TX 78236-9853

M\_006\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

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PLEASE PRINT LEGIBLY.

LOCATION: McConnell/Wichita, KS DATE: Nov 11, 2013

I feel that any environmental impact by the proposed beddown is offset advantageously by the economic impact gained by the Wichita area. It sounds like Wichita would be the least negatively impacted of any of the four communities being considered.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: Ellen L. McGee

Organization: individual/community

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

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U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_007\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

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PLEASE PRINT LEGIBLY.

LOCATION: DATE:

Wichita 11/12/13

The communities surrounding McConnell have been good neighbors being ever aware of the environmental impact they have on the mission of the base. We consider the mission of McConnell to be a positive influence on the total environment of our communities.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: Keith Lesher

Organization:

Address: 2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

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Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

M\_008\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

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PLEASE PRINT LEGIBLY.

LOCATION: DATE:

I would like to be able to take a tour through the new KC-46A.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: Bill Nadelroed

Organization: Self

Address:

City/State/Zip:

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_009\_D\_I

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

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PLEASE PRINT LEGIBLY.

LOCATION: WICHITA KS

DATE: 12 NOV 13

McCONNELL AFB IS AN IDEAL LOCATION FOR THE KC46A.

- IT IS IN THE MIDDLE OF THE COUNTRY, WELL-LOCATED FOR TANKERS TO REFUEL CROSS-COUNTRY FLIGHTS.
- IT IS CONVENIENT FOR AIRCRAFT USING THE TRAINING ROUTES OF WEST TEXAS AND THE WESTERN PLAINS.
- IT HAS RUNWAY + RAMPS THAT WERE BUILT TO HANDLE THE B-1 BOMBER.
- IT IS ALREADY THE BIGGEST TANKER BASE IN THE WORLD.
- THE RECENT EXIT OF BOEING FROM ADJACENT PROPERTY PROVIDES ROOM FOR EXPANSION, IF DESIRED.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: DANA SHIFFLETT MSgt USAF (RET)

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

M\_010\_D\_I

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

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PLEASE PRINT LEGIBLY.

LOCATION: Wichita

DATE: 11-12-2013

Come on down! We're looking forward to the new tankers.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: William Wynne

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_011\_D\_O



November 12, 2013

Ms. Jean Reynolds  
U.S. Air Force  
AFCEC/C ZN  
2261 Hughes Avenue, Ste. 155  
JBSA Lackland AFB, TX 78236-9853

RE: KC-46A PUBLIC HEARING IN WICHITA, KANSAS

Dear Mrs. Reynolds:

The Wichita Metro Chamber of Commerce represents 1,750 area businesses and organizations that employ nearly 153,000 people. Our board is comprised of 57 business leaders. The Chamber strongly encourages and supports the finalization of your decision to place the KC-46A program at McConnell Air Force Base.

Recognizing the vital role McConnell plays in ensuring our safety and freedom, the Chamber has been a long-time supporter of the mission of the base through our affiliate organization, the Friends of McConnell. This organization is made up of business leaders and residents who are dedicated to providing a link between leadership at the base and their civilian counterparts.

The Friends of McConnell expresses community pride and appreciation of area military by providing organizational and financial support for Commander-directed programs. The group strives to make McConnell AFB the most desirable assignment of an Airman's or Officer's career.

The Chamber has allocated staff and resources in support of activities of the Friends of McConnell since the group was formed in the 1960s. Pat Gallagher, a long-time Chamber employee who serves as our military liaison, has been recognized for her dedication to her role with appointments to various military councils. She is also the recipient of the Golden Eagle award and serves on The Air Mobility Command Civic Council at Scott AFB, Illinois.

We look forward to continuing this support and look forward to your announcement that the the award-winning McConnell Air Force Base has been given the additional responsibility of the KC-46A program.

Sincerely,

A handwritten signature in black ink, appearing to read 'Gary Plummer'.

Gary Plummer  
President & CEO

350 West Douglas Avenue • Wichita, KS 67202-2970 • t: 316-265-7771 • f: 316-265-7502 • w: wichitachamber.org • www.gallego.com

VENTURE BOLDLY

M\_012\_D\_A

Chairman Jim Skelton  
Air Force Public Hearing  
November 12, 2013

Good evening. On behalf of the Board of Sedgwick County Commissioners, thank you for allowing this opportunity to speak in support of McConnell Air Force Base. I am confident that you will hear from a number of supportive individuals and groups this evening who want to assure you that McConnell Air Force Base is in a very strong position to be the Main Operating Base for the tanker replacement program. McConnell Air Force Base has always been a valuable neighbor and partner to Sedgwick County. We have watched with pride over many years as the air men and women at the base have adapted to changes in mission and aircraft. We are extremely proud to have the "super" tanker base, and the military personnel and their families, in our community.

We know that having McConnell Air Force Base provides a significant economic boost to our community – and we are proud that we are able to provide things in our community for the military personnel and their families to make their stay here great. Sedgwick County supports those quality of life programs like the Sedgwick County Zoo, Exploration Place and the INTRUST Bank Arena, which help provide cultural and entertainment options. As well, we encourage outdoor play through our great parks like Sedgwick County Park, Lake Afton Park and numerous connecting bicycle paths in the

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_012\_D\_A

community. We also partner with the higher education community, through partnerships with Wichita State University and Wichita Area Technical College, to provide adult learning opportunities. In 2010, Sedgwick County built the National Center for Aviation Training, NCAT, a state-of-the-art training center to support aviation research and training for the aviation industry.

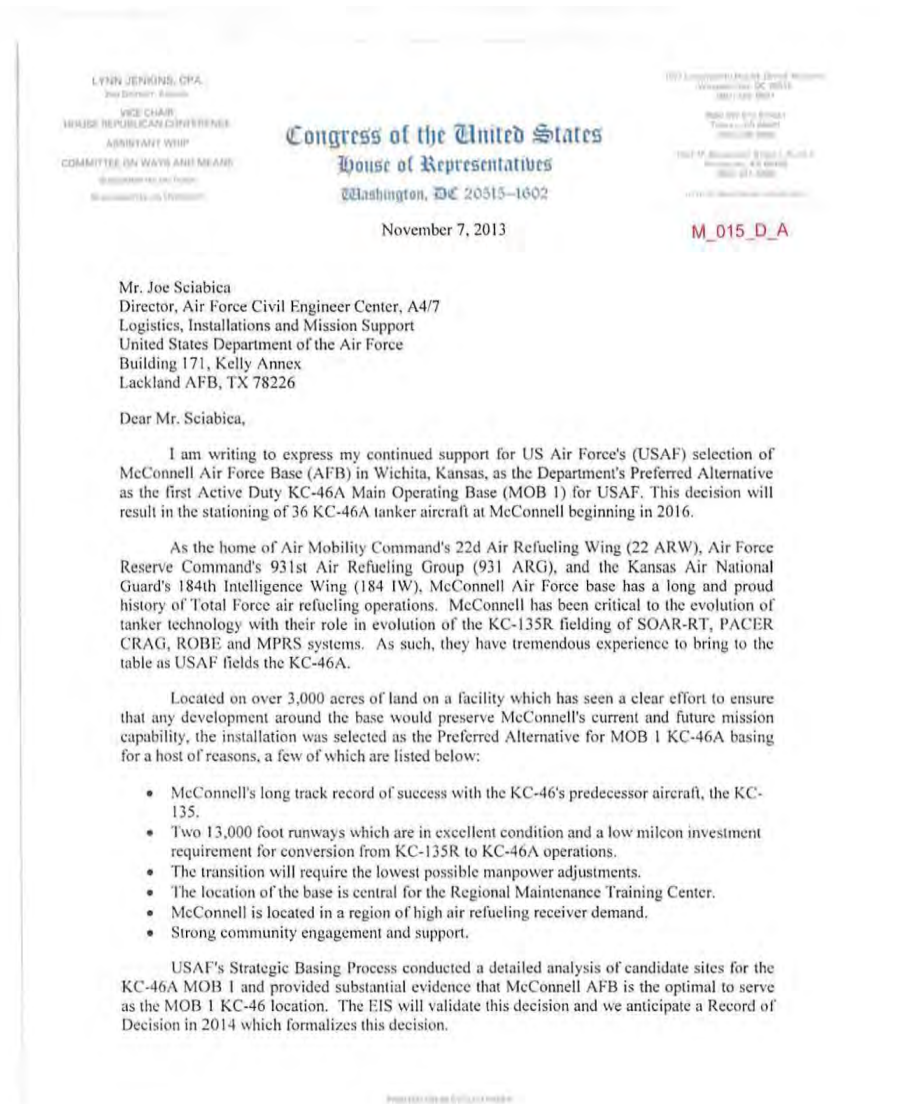
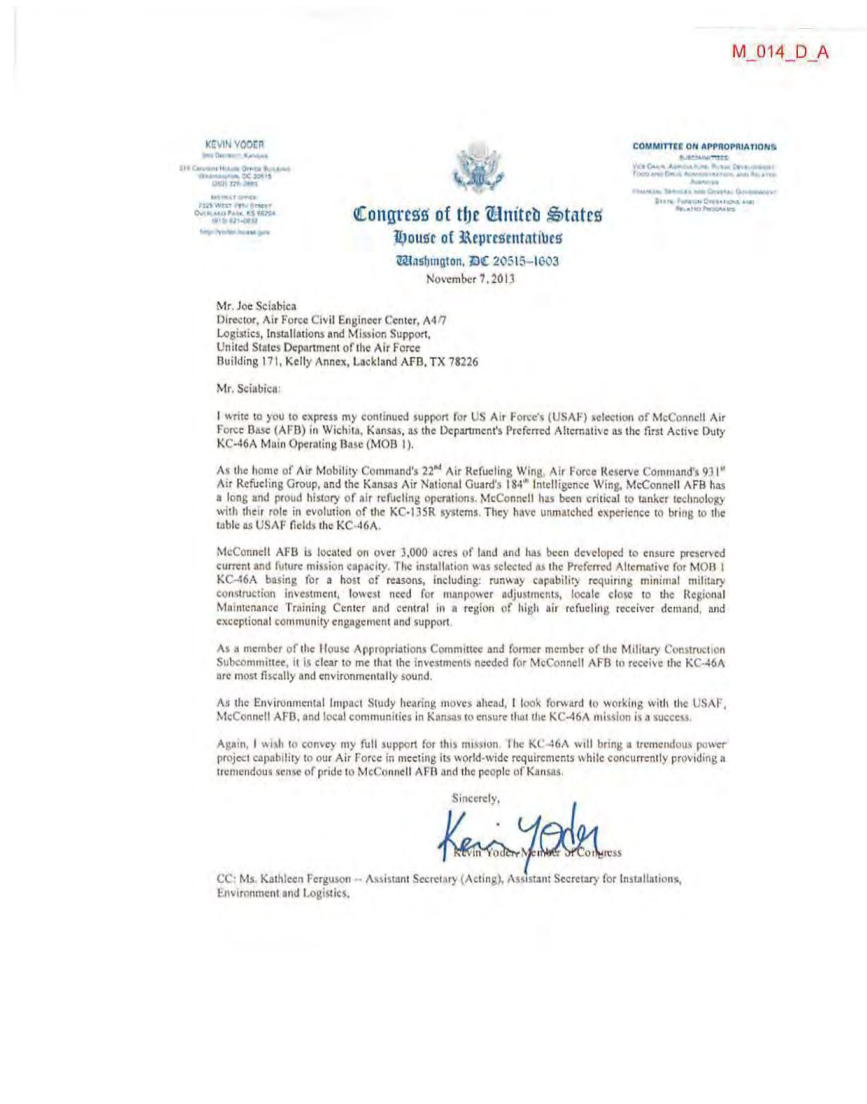
We know that these are critically important factors for your personnel while they are stationed here and also a part of what encourages them to retire here as well. We are so pleased to have the long-lasting partnership with McConnell Air Force Base, and are so proud of their expanding role in our nation's defense. We understand and appreciate how important it is that we work together as neighbors, partners and friends.

M\_013\_D\_A

<b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b> <b>Public Hearing Written Comment Form</b> For more information or to submit comments online, please go to: <a href="http://www.kc-46a-beddown.com">www.kc-46a-beddown.com</a>	
PLEASE PRINT LEGIBLY.	
LOCATION: <u>Wichita</u>	DATE: <u>11/12/13</u>
<u>McConnell AFB has always been such an integral part of our city; I just never think of it as separate.</u> <u>As a member of the Kansas House of Representatives, serving on the Veterans, Military and Homeland Security Committee, I have an additional interest in McConnell.</u> <u>I hope the airbase will always be a part of our community.</u>	
<small>**** CONTINUE ON BACK FOR MORE SPACE ****</small>	
<small>Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.</small>	
Name: <u>Carolyn L. Bridges Ed.D.</u>	
Organization: <u>Ks. House of Representatives</u>	
Address: _____	
City/State/Zip: _____	

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
 Ms. Jean Reynolds  
 U.S. Air Force, AFCEC/CZN,  
 2261 Hughes Ave., Ste. 155  
 JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

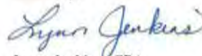


A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_015\_D\_A

Again, I wish to convey my full support for this mission. The KC-46 will bring a tremendous power project capability to our Air Force in meeting its world-wide requirements while concurrently providing a tremendous sense of pride to McConnell AFB and the people of Kansas.

Sincerely,



Lynn Jenkins, CPA  
Member of Congress

CC:

Ms. Kathleen Ferguson -- Assistant Secretary (Acting), Assistant Secretary for Installations, Environment and Logistics,

TIM HUELSKAMP  
1ST DISTRICT, KANSAS  
WASHINGTON, DC  
129 Connelley House, 2000 Building  
Washington, DC 20515  
(202) 225-2715  
Fax: (202) 225-5124

SOCIAL MEDIA:  
facebook.com/CongressmanHuelskamp  
twitter.com/CongHuelskamp  
youtube.com/CongressmanHuelskamp  
http://huelskamp.house.gov

Congress of the United States  
House of Representatives

Washington, DC 20515-1601

November 8, 2013

SMALL BUSINESS COMMITTEE  
SUBCOMMITTEE ON AGRICULTURE,  
ENERGY AND TRADE  
SUBCOMMITTEE ON HEALTH  
AND TECHNOLOGY  
SUBCOMMITTEE ON CONTRACTING  
AND WORKFORCE  
VETERANS' AFFAIRS COMMITTEE  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS  
SUBCOMMITTEE ON HEALTH

M\_016\_D\_A

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support,  
United States Department of the Air Force  
Building 171, Kelly Annex, Lackland AFB, TX 78226

Dear Mr. Joe Sciabica,

I am writing to express my support for the US Air Force's (USAF) selection of McConnell Air Force Base in Wichita, Kansas, as the Department's Preferred Alternative as the first Active Duty KC-46A Main Operating Base (MOB 1) for USAF.

As home to the Air Mobility Command's 22nd Air Refueling Wing (22 ARW), Air Force Reserve Command's 931st Air Refueling Group (931 ARG), and the Kansas Air National Guard's 184th Intelligence Wing (184 IW), McConnell carries a long history of Total Force air refueling operations. The base has also played a critical role in the progression of tanker technology with the evolution of the KC-135R.

Looking forward I believe McConnell also will play a vital role in the years ahead with the stationing of 36 KC-46A tanker aircraft at McConnell beginning in 2016. This stationing will complement current assets at the 3,000 acre facility for a variety of reasons. These include the following:

- Two 13,000 foot runways in excellent condition and a low milcon investment requirement for conversion from KC-135R to KC46A operations.
- Strong engagement, participation and support from the surrounding community.
- An ideal central location for the new KC-46A Regional Maintenance Training Center.
- Positioned in a region of high air refueling receiver demand.
- Of all installation candidates McConnell possesses the lowest manpower adjustments necessary for transition from KC-135 refueling aircraft to KC-46A.

McConnell Air Force Base is an optimal location to serve as the MOB 1 KC-46 location for the USAF. The Environmental Impact Study will validate this decision and we look forward to a Record of Decision to formalize this decision in 2014. This mission has my full support and I look forward to working with the USAF, McConnell Air Force Base, and local communities in Kansas to move forward to ensure the KC-46A mission at McConnell is a success.

Sincerely,  
  
Tim Huelskamp  
Member of Congress

DOUGLAS CITY:  
100 Military Avenue, Suite 200  
Douglas City, KS 67001  
(620) 229-0172  
Fax: (620) 229-0297

MANHATTAN:  
727 Prairie Avenue, Suite 10  
Manhattan, KS 66502  
(785) 309-0572  
Fax: (785) 327-0357

HULLENSBURG:  
One North Main, Suite 525  
Hullesburg, KS 67501  
(620) 605-6130  
Fax: (620) 605-6300

SALINA:  
118 West Main Avenue, 4th Floor, Suite B  
Salina, KS 67401  
(785) 309-0572  
Fax: (785) 327-0357

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

This was nothing more  
than a "pat me on my back"  
political mess. Shame.

M\_017\_D\_1

M\_018\_D\_1

<p align="center"><b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b></p> <p align="center"><b>Public Hearing Written Comment Form</b></p> <p>For more information or to submit comments online, please go to: <a href="http://www.kc-46a-beddown.com">www.kc-46a-beddown.com</a></p>	
PLEASE PRINT LEGIBLY.	
LOCATION:	DATE:
<p>Wichita is a wonderful city -- Small town with Big city feel. McConnell is a big part of that - Daily as I drive around this city, I am always measured that things are right when I see those gray planes making their Touch &amp; Go landings. Those who fly, work and support those planes are also a excellent citizens to our community. The Air Force and Wichita &amp; surrounding area support the new KC-46A Base in Wichita. We want the New Base here.</p>	
**** CONTINUE ON BACK FOR MORE SPACE ****	
<p><small>Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.</small></p>	
Name:	Bowie Scruggs
Organization:	
Address:	
City/State/Zip:	

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
 Ms. Jean Reynolds  
 U.S. Air Force, AFCEC/CZN,  
 2261 Hughes Ave., Ste. 155  
 JBSA Lackland AFB, TX 78236-9853

*A.7.3.10 McConnell AFB Draft EIS Comments (Continued)*

M\_019\_D\_A

M\_019\_D\_A

**STATEMENT OF THE WICHITA AIRPORT AUTHORITY**

**November 12, 2013**

On behalf of the City of Wichita Airport Authority, we would like to express our strong support for McConnell Air Force Base with respect to its selection for the main operating base of the KC-46A tanker aircraft.

The Airport Authority is the owner and operator of both Wichita Mid-Continent Airport and Colonel James Jabara Airport (general aviation reliever field). We believe that the Air Force should select McConnell for this mission for the following reasons that are directly related to the services and facilities that we have successfully and proudly provided to McConnell and other military bases for a number of years:

- McConnell tanker aircraft routinely conduct an average of 35 or more operations per month at Mid-Continent airport. This includes touch-and-go operations as well as full-stop takeoffs and landings which are used for pilot training and proficiency missions.
- Mid-Continent airport is open and available for McConnell aircraft in the event of weather, mechanical, or emergency diversion situations. Just last week, for example, Mid-Continent Airport hosted four KC-135 tanker aircraft for a couple of days during inclement weather when the instrument landing system at McConnell was under repair.
- The FAA Air Traffic Control Tower and Radar Approach Control operators at Mid-Continent are trained and highly experienced in handling "heavy jet" tanker traffic and other military aircraft operations.
- Because of the airport's full-service and all-weather capabilities, it has become the facility of choice for not just McConnell aircraft, but those from other Air Force bases and other military services as well, who routinely operate in and out of Mid-Continent.
- Our fixed base service operators have fueling capabilities and government contracts which permit them to provide aircraft refueling to literally any military aircraft.
- The airport has plenty of ramp space to accommodate the temporary parking and support operations for tankers during a stop here.



### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_019\_D\_A

- The airport has a 24-hour Air Traffic Control Tower and Radar Approach Control which currently provides radar guidance to McConnell aircraft.
- The airport has a 24-hour airport police and fire department which is capable of providing emergency services and security protection for tanker aircraft while on the ground.
- The airport has inspectors from US Customs & Border Protection to handle inbound international aircraft.
- Other Air Force bases in Oklahoma and throughout the region use Mid-Continent for pilot training already due to our capabilities, and because air traffic here is less than in surrounding states. There are approximately 1200 military operations per month here as a result of this airport being the facility of choice in the region. Because those aircraft come to Mid-Continent, it leaves McConnell free to operate without any interference.
- The airspace surrounding Wichita is relatively uncongested and has plenty of capacity to handle many more operations than currently come into both McConnell and Mid-Continent.
- This part of the country has wide-open airspace, clear skies, and outstanding weather that is conducive to the placement of air-refueling flight tracks by the tankers. One of the reasons for that is that these tracks were established in areas that don't conflict with highly used airliner jet routes. Having a tanker base located in close proximity to these air-refueling tracks increases efficiency of military operations and reduces fuel consumption, and is therefore a huge cost savings for the Air Force.

We greatly appreciate this opportunity to comment on this project, and look forward to a positive outcome in favor of McConnell.

M\_020\_D\_A

STATE CAPITOL  
300 S.W. TENTH AVENUE  
TOPEKA, KS 66612  
(785) 296-7665  
jim.howell@house.ks.gov  
125 E. BUCKTHORN RD.  
DERBY, KS 67037  
(316) 788-4887  
jimhowell4ks@gmail.com

#### Kansas House of Representatives



**Representative Jim Howell**  
81st District

COMMITTEE ASSIGNMENTS  
VICE-CHAIR GENERAL GOVERNMENT  
VICE-CHAIR BUDGET  
VICE-CHAIR PENSIONS & BENEFITS  
MEMBER JUDICIARY

Testimony for  
**PUBLIC HEARINGS FOR THE**  
**KC-46A FTU and MOB 1 BEDDOWN DRAFT EIS**  
November 11th, 2013

I am Kansas State Representative Jim Howell. I represent the 81<sup>st</sup> district which includes McConnell AFB. I am also a candidate for Sedgwick County Commission district 5 which also includes McConnell AFB. I am the Vice-Chairman for the South-Central Legislative Delegation that includes more than 50 Kansas legislators.

I am an Air Force Veteran and I work on Tankers in my civilian job. I have lived in Derby for 22 Years, the last 15 on the very northern edge of Derby just a couple miles south of the end of runway.

As a state representative, I want you to know a few things that I have discovered. First of all, I have received thousands of emails on a wide variety of topics and many comments about many concerns but not one time have I ever received a complaint about McConnell or the planes flying over our community. Furthermore, I have knocked on thousands of doors to discuss issues and not one time have I ever had someone tell me that they are upset or disappointed about anything related to McConnell. I have never heard a single complaint from anyone about noise. In fact the opposite is true. We kind of miss the roar of the B-1 Bombers. My dog used to run around the backyard and chase the B-1's in the sky. We used to go to the highest hill just to get higher up thinking we could see them better when they did the monthly after-dark afterburner takeoffs.

We are used to the planes flying overhead and it is not something we object to but rather we love the planes because they represent the sound of freedom. Naval Air Station Whidbey Island in Washington State right now is undergoing a restriction on the EA-18G Growler. A Recent Article: *Whidbey Island group sues Navy, says jet noise unbearable - A group of Whidbey Island citizens who say they must use headphones in bed to block out the noise from a nearby airfield is suing the U.S. Navy.* This sort of community opposition will never happen here!

## A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_020\_D\_A

For a few years, I was stationed England. I personally witnessed unrelenting protests in the community and especially near the fence around the flight line. To this day, we can get on the web, and see increasing organized opposition to the American military presence at these bases in England. Later, I was stationed in New Mexico. I used to mingle in the community as a young buck sergeant and I never felt like the community really wanted me there. I think the opposite is true here in Wichita and Derby. I think the community loves our local airmen. In a sense, these veterans are rock stars. They are celebrities. I still see people paying for meals for strangers in uniform. Just two days ago in Church, our veterans stood to receive appreciation from our congregation and it was filled with hearty handshakes and a standing ovation. Our veterans are heroes and we love them. I have never seen a place that wants to support and encourage the military like people in this community.

In my three years serving this district, I have seen many pieces of legislation that have some sort of military aspect. These bills are the most universally supported measures receiving bi-partisan approval. The state has a reputation that demonstrates military favor and wide ranging support.

We do also recognize the great relationship we have with the base. We know Kansas has enjoyed more prosperity because of McConnell's presence. Today, we are excited and anxious for the next generation's state of the art new workhorse, the KC-46. It will be home here with people that love what that plane represents. We know this is good for our community and for Kansas and the United States. We believe we are right for the needs of the Air Force too.

Thank you for giving me the opportunity to encourage you to bring the KC-46 to us. We are ready.

Jim Howell  
Ks State Representative, District 81  
125 E Buckthorn Rd, Derby Ks, 67037  
316-788-4887 316-253-6797 C

M\_021\_D\_I

# KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT

## Public Hearing Written Comment Form

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS DATE: 12NOV13

WE WELCOME THE KC-46A

TANKERS TO McCONNELL AFB -

OUR BASE

"GO MOB 1"

We very much enjoy the air shows,  
please keep them up.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: \_\_\_\_\_

Organization: Roberts + Roberts Properties LLC

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_022\_D\_1

M\_023\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS DATE: 12 Nov 13

OUR HOPE IS THAT McCONNELL AFB  
WILL BE CHOSEN AS HOME FOR  
THE KC-46A TANKERS AND MOB 1  
THANK YOU FOR CONSIDERING US.

I enjoy seeing the KC 135's flying over my house,  
especially when they are refueling other aircraft.

\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*

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Name: JOHN & AUDREY ROBERTS

Organization: \_\_\_\_\_

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS FOR McCONNELL AFB DATE: 11-12-13

McCONNELL IS A AWARD WINNING WING OF KC-135 BASE  
WITH MANY NEW BUILDINGS CONTRUCTED SINCE 1990.  
BEING HASO MANY BUILDINGS WHICH COULD BE BOUGHT  
OR LEASED, FOR THE NEW KC 46 MISSION. THE MODEL  
KC135'S HAVE BEEN QUICKER THAN B-1, F16, B-52  
B47 & F4 MISSIONS. McCONNELL IS LOCATED IN MIDDLE OF  
OF UNITED STATES AND SHOULD BE THE MAIN OPERATING BASE  
BECAUSE OF STRONG COUNTRY IS THE AVIATION CAPITAL OF  
THE COUNTRY AND PEOPLE FULLY SUPPORT THE AIRFORCE AT  
McCONNELL. I HAVE LIVED IN COUNTRY SINCE LATE 1940'S  
AND I AM VERY POSITIVE ON McCONNELL AIR FORCE BASE.

\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*

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Name: RONALD L. WOLF

Organization: SELF, PILOT FROM COOK AIRFIELD, RUSSELL

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_023\_D\_I


Continuation Page

As a MILITARY AIR TRAFFIC CONTROLLER FOR U.S. Army  
in Vietnam, & SR. CONTROLLER AT Ft. Rucker, Ala.  
AND TWIN C-119 FLOT LAND AIRCRAFT AND FLY FROM  
CROOK AIRFIELD FOR OVER 30 YEARS WHICH IS IN McCONNELL,  
AFB OF ICT CENTRAL AREA & THE PILOTS AND I  
BELIEVE THE OWNERS OF THE FIELD ARE PRO McCONNELL  
AFB & WICHITA PILOTS IN GENERAL ARE PRO AIR FORCE,  
AT McCONNELL.

PLEASE, CHOOSE WICHITA'S McCONNELL AFB  
FOR THE KC-46 TANKER MISSION.

Thank you for your input.

M\_024\_D\_O



**Wichita Independent Business Association**  
THE VOICE OF INDEPENDENT BUSINESS

November 12, 2013

THE KC-46A FTU and MOB 1 BEDDOWN Review

Dear Review Team:

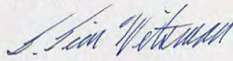
The Wichita Independent Business Association/Kansas Independent Business Coalition (WIBA/KIBC) is an association of nearly five hundred Kansas businesses that are not publicly traded companies. WIBA has been in existence for over eighty-two years. We have partnered with the Wichita Regional Chamber of Commerce to establish a joint Military Affairs Committee.

The preponderance of our members do not directly gain from the presence of McConnell Air force Base. We are, however, keenly aware of McConnell's importance and pay more than lip service to supporting the base and its mission. WIBA's Chairman-Elect, Wayne Roberts, is Chairman of the Joint WIBA/Wichita Chamber Military Affairs Committee and has played a lead role in demonstrating the community's support for the mission of home base for the new tanker fleet.

In June a representative from McConnell was the featured speaker at WIBA's monthly luncheon. On Tuesday, November 25, our President Tim Witsman will introduce the Vice Commander of the Wing at a presentation to over two hundred people at Wichita Downtown Rotary. We have members who are Friends of McConnell and some who are also Golden Eagles. Our President served four years as Honorary Commander for Mission Support at McConnell.

You may be certain that the area business community is deeply engaged in insuring the growth of a healthy partnership between McConnell AFB and the south central region of Kansas. If there are any ways that we might be helpful to the review team we stand ready to respond.

Respectfully,



F. Tim Witsman, President  
Wichita Independent Business Association/Kansas Independent Business Coalition

200 E. First St., Ste. 101 / Wichita, KS 67202-2106  
316-201-3264 / 1-877-228-2191 / FAX 316-201-3268 / Web Site: [www.wiba.org](http://www.wiba.org)

## A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_025\_D\_1

My name is Jack Pulley. I am employed by Davis-Moore Automotive but I am here this evening as president of the Friends of McConnell.

- I thank you for the opportunity to speak on behalf of the F.O.M. -- our region's civilian support organization for McConnell AFB, its airmen and families.
- The activities and wide range of support that the Friends of McConnell provides speaks volumes for the respect and admiration our businesses and residents have for the airmen of McConnell Air Force Base
- Allow me to list of a few of the activities we have supported in recent months:
  - The Annual and Quarterly Awards programs;
  - The Enlisted Spouses "Operation Holiday Surprise" program
  - The Officers Spouses Scholarship Auction
  - The McConnell Top 3 Senior NCO Induction Dinner
  - "Hearts Apart"
  - The "Folds of Honor" Golf Tournament
  - The Airmen's Council; and
  - The Annual Awards programs of the 931<sup>st</sup> Air Refueling Group and the 184<sup>th</sup> Intelligence Wing integral parts of Team McConnell!
- In addition the Base can always count on the Friends of McConnell to support:
  - The Tops In Blue Performances
  - McConnell Open House/Air Show weekends
  - Air Mobility Command RODEO
  - The Air Force Ball,
  - And any number of Squadron, Group and family celebrations throughout the year
- We ARE an Air Force Town...
  - Air Force families are evident in every aspect of our communities –

Jack Pulley - 2

M\_025\_D\_1

- our schools and their athletic programs;
- our churches;
- community theatres;
- parades;
- recreational programs;
- charitable and volunteer organizations;
- civic clubs;
- neighborhood associations
- The merging of military and civilian is invisible – here we are all citizens of one community where the uniform you wear does not define you, it enhances you
- The extra mile
  - There have been many instances when personal crises have occurred and the Friends of McConnell and the surrounding communities have come to the rescue.
    - Examples.....????? *House was broken into -*
- And taking the McConnell message into the community is something we do frequently. A continual education of our citizens about the value of McConnell is something we relish doing, speaking to civic clubs, church groups, and veteran's groups whenever and wherever possible.
- Part of the Friends of McConnell's mission statement is to guarantee that an assignment to McConnell is the BEST assignment of an airman's career.
  - Judging from the number of great compliments we receive from our Airmen, we're doing a good job of that.

Thank you for this opportunity to speak in support of McConnell Air Force Base becoming the BEST assignment for the new KC46A Tanker. We welcome it!

*A.7.3.10 McConnell AFB Draft EIS Comments (Continued)*

M\_026\_D\_I

Testimony Presented to staff of the United States Air Force on the Selection of  
McConnell Air Force Base as the Preferred Site for the KC-46A Tanker

By

Claudio Ferraro, Senior Administrator for Clinical Services Lines  
Via Christi Hospitals in Wichita

I am Claudio Ferraro, Senior Administrator for Via Christi's St. Joseph Hospital and Clinical Service Lines. I am a past Honorary Wing Commander and a current member of the Friends of McConnell organization.

Via Christi Health is the largest provider of health care services in Kansas with its origin dating back to 1889. Based in Wichita we serve Kansas and northeast Oklahoma through our doctors, hospitals, senior villages and health services.

I am honored to have the privilege to share some information about the state of health services capabilities here and how we are positioned to collaborate and support McConnell AFB in its role as the home for the KC 46A Tanker. Wichita and the South-Central region of the state are extremely fortunate to have world-class health services across the continuum from primary care to the most acute care services. Via Christi, HCA Wesley and other care providers collectively provide some of the most high intensity care and services that are in place to augment McConnell's capabilities to ensure its Mission is always in a state of readiness – we are here to serve its airmen, their dependents and its many civilian employees and their families. Some highlights of our collective capabilities include:

- 5 acute care hospitals
- 4 specialty hospitals
- Maternal Fetal Medicine, Level III NICU facilities and the most modern birth facilities and services
- State-of-the-art Cancer Treatment, Cancer Research and support services
- Wound Care Centers
- Level 1 Trauma Centers and ERs specializing in Pediatric Care
- Comprehensive Pediatric Care – outpatient, inpatient and ERs
- Regional Burn Center
- Accredited cardiac, neuro/ stroke and epilepsy programs
- Joint Commission Accredited Stroke Centers
- Rehabilitation Hospitals
- A Behavioral Health Hospital
- In collaboration with KU, Wesley and Via Christi, over 250 residents are trained in 13 residency programs in Wichita
- Extensive network of primary care, imaging, ambulatory surgery and rehab clinics exist throughout the region
- Wichita is home to the Robert J. Dole VA Medical Center – serving thousands of veterans across many Kansas Counties for over 75 years

M\_026\_D\_I

As an active supporter of McConnell in a variety of capacities over the years, it is clear that this community and the health care sector have had a long and rich tradition in supporting McConnell since its inception. In addition to strong partnerships in helping to ensure that McConnell maintains its Mission readiness, we have been honored to serve side by side on base and in the community from air shows to working collaboratively during periods of local and regional disasters.

Via Christi is very pleased the Air Force selected McConnell Air Force Base to be a "preferred" site for the new KC-46A tanker and we collectively stand behind and with our military colleagues in offering our support in these final stages of making this designation permanent. McConnell Air Force Base has been a tremendous asset to our south central Kansas community both from an economic and community partner standpoint.

Wichita and our surrounding communities provide an outstanding quality of life to our citizens from access to excellent education systems, to great retail and entertainment options. In addition, when you combine Via Christi's health service assets with other health care provider partners in this community, we believe the service members and civilian employees of McConnell Air Force base also have access to a broad range of the most highly reliable, high quality health services.

We believe there is no better choice among the site options being considered. Therefore, Via Christi pledges our full support of McConnell Air Force Base, and we stand ready to assist the Air Force and our community in the process of securing the final selection of the base as the home for the KC-46A tanker.

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_027\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: Wichita, KS

DATE: 11/12/2013

My concerns are based on the crash of a KC-135 tanker crash that released 30,000 gallons of jet fuel. Flight plan concerns me because the crash occurred at 21st Plott. Maintenance logs indicated problems with autopilot. They also indicate that the landing gear was installed backwards. This information was in Mayday in Wichita by DW Carter. I want to say that McConnell has kept high standards in maintenance. I hope Boeing will cooperate with fix any defects in the tankers. I hope that

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: Diana Alexander

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

Continuation Page

M\_027\_D\_1

there is an emergency plan in place  
if a tragedy such as the one in  
1965 again occurs

Thank you for your input.

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_028\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**  
**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS

DATE: 11-12-13

Wichita and McConnell have successfully been partners for many, many years. Wichita has many cultural events that benefit the business stationed at McConnell. McConnell AFB is very important to the Wichita economy. I fully support McConnell.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: JOHN MCCUNE

Organization: NONE

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

M\_029\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**  
**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS

DATE: 12 NOV 2013

I AM A RETIRED O6 - USAF I NOW TEACH AS A FULL TIME FACULTY MEMBER AT WICHITA STATE UNIVERSITY. IN THE 8 YEARS I HAVE TAUGHT AT WSU, I HAVE BEEN AMAZED AT THE NUMBER OF BOTH ACTIVE DUTY AND RETIRED DUTY ARE CURRENTLY BEING COLLECTED AT WSU.

WICHITA OFFERS OUTSTANDING OPPORTUNITY FOR ACTIVE DUTY AND RETIRED DUTY TO THE MILITARY COMMUNITY. WICHITA IS HIGHLY SUPPORTIVE OF THE MILITARY AND OFFERS A WONDERFUL PLACE FOR MILITARY TO LIVE.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: RON STEPHEN

Organization: WICHITA STATE UNIVERSITY

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

## A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_030\_D\_1

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**

**Public Hearing Written Comment Form**

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WSHDATE: 11-12-13

As A STAFF SERGEANT STATION AT Mc CONNELL AFB FROM 1965 TO 1967 I CAN STATE THIS HAS ALWAYS BEEN A FACILITY THAT TAKES PRIDE IN DOING THE BEST TO BE NUMBER ONE IN ACCOMPLISHING IT MISSION. IT IS ALSO VERY TRUE THAT MANY AIR FORCE PERSONNEL CHOOSE TO LOCATE IN WICHITA SURROUNDING COMMUNITIES. AFTER MY RETURN FROM VIETNAM I ELECTED TO LOCATE IN WICHITA TO WORK AT BEECH AVIATION CORPORATION. A CORPORATION THAT APPRECIATES IT'S FORMER AIR FORCE PERSONNEL.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

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Name: CHARLES E. POWLOSKI

Organization: \_\_\_\_\_

Address: 1 \_\_\_\_\_

City/State/Zip: \_\_\_\_\_

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBSA Lackland AFB, TX 78236-9853

PS: McCONNELL TOOK BEST BASE SUPPLY UNIT IN THE AIR FORCE IN 1967 AND STILL WORKS TO BE THE BEST IN SUPPLY, MAINTENANCE AND MISSION ACCOMPLISHMENT.

M\_031\_D\_1



11-12-13

My name is Charlotte Sargent. I am a retired veterans spouse. When volunteering at a facility at McConnell Air Force Base we seldom hear planes taking off. I have heard a plane that is usually a visiting Air Force plane other than a KC135. I am sure the new tanker will be even quieter & more friendly to the environment. We support the new tankers.

Charlotte Sargent  
Wichita, Ks.



A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_032\_D\_1

<b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b> <b>Public Hearing Written Comment Form</b> For more information or to submit comments online, please go to: <a href="http://www.kc-46a-beddown.com">www.kc-46a-beddown.com</a>	
PLEASE PRINT LEGIBLY.	
LOCATION:	DATE:
MAURICE CLARK GUNTHER	
Please send copy F EIS	
**** CONTINUE ON BACK FOR MORE SPACE **** Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.	
Name:	
Organization:	
Address:	
City/State/Zip:	

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
 Ms. Jean Reynolds  
 U.S. Air Force, AFCEC/CZN,  
 2261 Hughes Ave., Ste. 155  
 JBSA Lackland AFB, TX 78236-9853

M\_033\_D\_1

<b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b> <b>Public Hearing Written Comment Form</b> For more information or to submit comments online, please go to: <a href="http://www.kc-46a-beddown.com">www.kc-46a-beddown.com</a>	
PLEASE PRINT LEGIBLY.	
LOCATION:	DATE:
WICHITA, KS 1-13-13	
MRS MCPHAW MADE AN EXCELLENT PRESENTATION AS DID JACK PULLEY.	
**** CONTINUE ON BACK FOR MORE SPACE **** Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.	
Name: BRIAN MCDANIEL	
Organization: CIVILIAN	
Address:	
City/State/Zip:	

Please turn in this form at the registration desk or mail by 9 December 2013, to:  
 Ms. Jean Reynolds  
 U.S. Air Force, AFCEC/CZN,  
 2261 Hughes Ave., Ste. 155  
 JBSA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_034\_D\_I

<p><b>KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT</b></p> <p><b>Public Hearing Written Comment Form</b></p> <p>For more information or to submit comments online, please go to: <a href="http://www.kc-46a-beddown.com">www.kc-46a-beddown.com</a></p>	
PLEASE PRINT LEGIBLY.	
LOCATION:	DATE:
WCU Wichita, KS	11-12-13
<p>**** CONTINUE ON BACK FOR MORE SPACE ****</p> <p>OVER</p>	
<p>Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.</p>	
Name: Bruce Sargent	
Organization: MSAFB Retirees Activities Assoc Member	
Address:	
City/State/Zip: Native Flint Hills Kansas Retired USA MSG	
<p>Please turn in this form at the registration desk or mail by 9 December 2013, to:</p> <p>Ms. Jean Reynolds U.S. Air Force, AFCEC/CZN, 2261 Hughes Ave., Ste. 155 JBSA Lackland AFB, TX 78236-9853</p>	

Continuation Page

M\_034\_D\_I

An Aside: The Cessna Mustang (Paw Model) is much louder than the KC-135. Since the KC-46A is designed to be quieter than the KC-135 the EIS noise factors should be good.

Wichita is Beech Aircraft/Cessna Aircraft/Learjet & vice versa. All 3 of these companies started & stayed in Wichita because of flying days & weather related testing days available in abundance.

Safety & common sense are strong attributes of the area. Even the non natives who come here become an accomplished part of this life or they leave because there is not enough bad stuff.

Thank you for your input.

*A.7.3.10 McConnell AFB Draft EIS Comments (Continued)*

M\_035\_DW\_I

-----Original Message-----

From: [REDACTED]  
Sent: Wednesday, November 13, 2013 12:08 AM  
To: Tarver, Jason E.  
Subject: KC-46A FTU and MOB 1 EIS Website request

Why should people have to put up with more tanker noise in Derby, Ks. the horn Happy trains coming by every 15 minutes is bad enough, then to have the tankers fly over Derby is bad for our homes, the noise was like a train going over our home, sure hate to have that going on for another 20 years, besides the vibration does much damage to our homes, we got a couple examples as the Tuesday meeting was going on, the tanker made 2 fly over's while the meeting was going on as Kathy Sexton, Derby manager was phrasing the Air Force for more tankers moving here, we don't need the noise for the little money it might bring to Derby area. Vaughn Lyon, A 47 year Derby home owner, a veteran, wishing for a peaceful area to live.

M\_036\_D\_I

-----Original Message-----

From: Todd Duhnke [REDACTED]  
Sent: Wednesday, November 13, 2013 4:50 PM  
To: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Subject: KC-46A FTU and MOB 1 EIS Website request

Dear Ms. Reynolds,

I am sorry that I was unable to attend last evening's program at the WSU campus here in Wichita. I would have loved to voice my support for this important project.

As a resident of Wichita since 1979, I fully support the United States Air Force's decision to bring the new KC-46A to McConnell Air Force Base. In fact, I can't think of a more appropriate place to base the new tankers as McConnell has all the necessary ingredients. A community that truly supports it's base, decades of experience flying tankers, excellent facilities, dual runways, room to expand, usually excellent flying weather, a community that supports all facets of aviation and close by alternates.

I live under one of the traffic patterns to McConnell, so I see the KC-135R's on a daily basis. I look up in awe every time one passes. I can't wait to see the new KC-46A pass overhead.

As Boeing completed a few very similar 767 Italian Air Force tankers here in town, I think every one will be pleased as the KC-46A will be a slightly quieter neighbor than the KC-135Rs are.

I think you can clearly count on our community to fully support the Air Force's decision to base our newest tankers at McConnell Air Force Base.


Best Regards,

Todd L. Duhnke  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]  
[REDACTED]

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

**KEVIN YODER**  
3RD DISTRICT, KANSAS  
219 CANNON HOUSE OFFICE BUILDING  
WASHINGTON, DC 20515  
(202) 225-2865

DISTRICT OFFICE:  
7325 WILLY 79TH STREET  
OVERLAND PARK, KS 66204  
(913) 621-0822  
<http://yoder.house.gov>



**Congress of the United States**  
**House of Representatives**  
**Washington, DC 20515-1603**  
November 7, 2013

**COMMITTEE ON APPROPRIATIONS**  
SUBCOMMITTEE:  
VICE CHAIR, AGRICULTURE, RURAL DEVELOPMENT,  
FOOD AND DRUG ADMINISTRATION, AND RELATED  
AGENCIES  
FINANCIAL SERVICES AND GENERAL INVESTMENT  
SYSTEM, FOREIGN OPERATIONS AND  
RELATED PROGRAMS

**M\_037\_D\_A**

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support,  
United States Department of the Air Force  
Building 171, Kelly Annex, Lackland AFB, TX 78226

Mr. Sciabica:

I write to you to express my continued support for US Air Force's (USAF) selection of McConnell Air Force Base (AFB) in Wichita, Kansas, as the Department's Preferred Alternative as the first Active Duty KC-46A Main Operating Base (MOB 1).

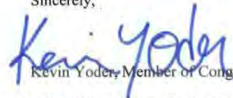
As the home of Air Mobility Command's 22<sup>nd</sup> Air Refueling Wing, Air Force Reserve Command's 931<sup>st</sup> Air Refueling Group, and the Kansas Air National Guard's 184<sup>th</sup> Intelligence Wing, McConnell AFB has a long and proud history of air refueling operations. McConnell has been critical to tanker technology with their role in evolution of the KC-135R systems. They have unmatched experience to bring to the table as USAF fields the KC-46A.

McConnell AFB is located on over 3,000 acres of land and has been developed to ensure preserved current and future mission capacity. The installation was selected as the Preferred Alternative for MOB 1 KC-46A basing for a host of reasons, including: runway capability requiring minimal military construction investment, lowest need for manpower adjustments, locale close to the Regional Maintenance Training Center and central in a region of high air refueling receiver demand, and exceptional community engagement and support.

As a member of the House Appropriations Committee and former member of the Military Construction Subcommittee, it is clear to me that the investments needed for McConnell AFB to receive the KC-46A are most fiscally and environmentally sound.

As the Environmental Impact Study hearing moves ahead, I look forward to working with the USAF, McConnell AFB, and local communities in Kansas to ensure that the KC-46A mission is a success.

Again, I wish to convey my full support for this mission. The KC-46A will bring a tremendous power project capability to our Air Force in meeting its world-wide requirements while concurrently providing a tremendous sense of pride to McConnell AFB and the people of Kansas.

Sincerely,  
  
Kevin Yoder, Member of Congress

CC: Ms. Kathleen Ferguson -- Assistant Secretary (Acting), Assistant Secretary for Installations, Environment and Logistics,

*Rec'd 11/14/13  
MCC/CC  
to the  
Chair  
C24*

**James Dean Petersen** M\_038\_D\_1

Date: Nov. 13, 2013, Page 1 of 2

To: Mr. Jean Reynolds  
U.S. Air Force

From: James Petersen

Subject: Wichita/KC 46 A Tankers

Ms. Reynolds, Concerning subject tankers and the Public meeting last evening, I suppose most people know that refueling tankers have a specific purpose other than for training people. They have to be based all around the world to refuel B-52's, B-1's and B-2's as well as other planes. But McConnell is basically a training base.

I worked for The Boeing Co. for 42 years and traveled to several AFB bases and spent my last 5 years at Edwards AFB, Ca.

The point is, I spent several years in the big hangars east of Oliver St. next to McConnell. (I've also worked at and for McConnell AFB) a few weeks ago it was published that all of the Boeing Property next to McConnell is for sale. Why wouldn't it make sense for the government AFB to purchase or lease all of the real estate, B-52 hangar, B-47 hangar, reprocess building, electronics bldg and A.F. one hangar plus much more and cut down on building all new.

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

James Dean Petersen 2 of 2

M\_038\_D\_I

hangers for the C-46A tankers. Those hangers will hold several tankers each, I know, I seen. I spoke to a gentleman by phone yesterday at Mc Connell. He had just returned from the middle east. He was not aware of any of the Boeing even existed. I understand that thousands of large air planes have taxied from the Boeing flight line, where there are, 'blast fences', to Mc Connell for take-off and landings and taxi back.

I hate to see any of our military cut back but perhaps what I've suggested could save some money and be an asset to the A/F. I am a WWII vet and see many things different than all levels of the government does in these days.

Sincerely,  
James Petersen

P.S. I worked with people at A.S.D. all through the 1980's and they tried to save money.

Bresnan, Sarah E.

From: prvs=1034e221d9=jean.reynolds@us.af.mil on behalf of REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN [jean.reynolds@us.af.mil]  
Sent: Monday, November 25, 2013 8:36 AM  
To: Daues, Tom V.  
Subject: FW: KC-46A FTU and MOB 1 EIS Website request  
Signed By: jean.reynolds@us.af.mil

-----Original Message-----

From: GUERRA, JUAN M GS-12 USAF HAF AFCEC/CZN  
Sent: Friday, November 15, 2013 1:45 PM  
To: [REDACTED]  
Cc: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Subject: RE: KC-46A FTU and MOB 1 EIS Website request

Mr. Lyon,  
Thank you for your comments related to the KC-46A Beddown draft Environmental Impact Statement (EIS). Your comments will be considered during the completion of the document.

Thank you,

John Guerra  
Program Manager  
Air Force Civil Engineer Center  
Environmental Center of Excellence  
Air Force NEPA Center (AFCEC/CZN)  
Joint Base San Antonio-Lackland  
[REDACTED]

-----Original Message-----

From: [REDACTED]  
Sent: Tuesday, November 12, 2013 11:07 PM  
To: GUERRA, JUAN M GS-12 USAF HAF AFCEC/CZN  
Subject: KC-46A FTU and MOB 1 EIS Website request

Why should people have to put up with more tanker noise in Derby, Ks, the horn happy trains coming by every 15 minutes is bad enough, then to have the tankers fly over Derby is bad for our homes, the noise was like a train going over our home, sure hate to have that going on for another 20 years, besides the vibration does much damage to our homes, we got a couple examples as the tuesday meeting was going on, the tanker made 2 fly over's while the meeting was going on as Kathy Sexton, Derby manager was phrasing the Air Force for more tankers moving here, we don't need the noise for the little money it might bring to Derby area. Vaughn Lyon, A 47 year Derby home owner, a veteran, wishing for a peaceful area to live.

Do THIS before eating carbs & every time

*A.7.3.10 McConnell AFB Draft EIS Comments (Continued)*

M\_040\_D\_A

RESOLUTION NO. 620-13

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF VALLEY CENTER, KANSAS URGING THE U.S. AIR FORCE TO SELECT MCCONNELL AFB IN WICHITA, KANSAS AS THE FORMAL TRAINING UNIT AND FIRST MAIN OPERATING BASE FOR THE KC-46A TANKER BEDDOWN.

WHEREAS, McConnell AFB in Wichita, Kansas is a finalist to serve as the active duty main operating base for the United States Air Force's new KC-46A tanker mission, and;

WHEREAS, the Wichita, Kansas area has a rich aviation history and has long supported KC-135 tanker missions, and;

WHEREAS, existing infrastructure and recent expansions in housing and support infrastructure would lend to successfully hosting the new KC-46A tanker mission, and;

WHEREAS, McConnell AFB has an exemplary record of service, and;

WHEREAS, the citizens of the City of Valley Center have demonstrated overwhelming support for McConnell AFB;

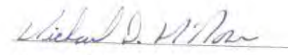
NOW THEREFORE, BE IT RESOLVED BY THE CITY OF VALLEY CENTER, KANSAS, the City Council of the City of Valley Center, respectfully requests the United States Air Force select McConnell Air Force Base as the Formal Training Unit and First Main Operating Base for the new KC-46A tanker mission and declares full community support for such.

PASSED AND APPROVED by the Governing Body of the City of Valley Center, Kansas, this 19<sup>th</sup> day of November 2013.



ATTEST:

  
Kristine A. Polian, City Clerk

  
Michael McNown, Mayor

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_041\_D\_A

*\*Ryan Flickner provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.*

**MR. FLICKNER:** Thank you. My name is Ryan Flickner and I serve as Deputy State Director for Senator Pat Roberts. On behalf of Senator Pat Roberts, I welcome all of you to the City of Wichita and McConnell Air Force Base and thank you for participating in this extremely important hearing. The turnout and local advocacy throughout this process are major factors for why the Air Force believes McConnell is the best base for our new tankers. I know many of you are life-long residents of the Wichita area. For our visitors, this is likely not the first time you have been to Wichita, the Air Capital of the World. McConnell Air Force Base is an economic staple in Wichita and has long been an important part of the fabric of Kansas. Thank you to each and every one of you for coming out in support of McConnell. Thank you for being an advocate in this exciting decision for Main Operating Base Number 1. Senator Roberts is confident that as you evaluate the operational and training requirements along with the potential impacts to existing missions, housing, infrastructure and manpower, you will find out that there is absolutely no better place for the first KC-46A tanker beddown than McConnell. McConnell is the home of Air Mobility Command's 22nd Air Refueling Wing, the Air Force Reserve Command's 931st Air Refueling Group, what we hope will be named a wing soon, as well as the Kansas Air National Guard's 184th Intelligence Wing. The integrated presence of our active duty reserves and guard make McConnell a model of excellence. Currently, McConnell flies, maintains and supports 44 KC-135s, or what we often refer to as Eisenhower era tankers. Senator Roberts fought hard for these aging aircraft to be replaced and I am so pleased that the KC-46A will come online by 2016 and now Senator Roberts is again fighting to make sure these new tankers call Wichita home. McConnell is the best choice for Main Operating Base Number 1 for several reasons. By replacing the current fleet of 44 KC-135 aircraft with 36 Next Gen Tankers at

#### M\_041\_D\_A

McConnell, the Air Force encounters the lowest manpower adjustment among candidate installations. For over two decades, McConnell has been home to the Air Force's KC-135 largest regional maintenance training center. In this role, McConnell has provided critical mission support and development through flight testing and validation. McConnell has support units on its base that flies tankers. McConnell results in the lowest military construction costs. McConnell is located in a region of high air refueling receiver demand. And let it not go unnoticed, McConnell has received more awards over the past 16 months than all other air mobility bases combined.

As the Environmental Impact Study hearing moves ahead, Senator Roberts looks forward to working with the Air Force, McConnell and our local community to ensure the success of the KC-46 mission. The Air Force's strategic basing process provided substantial evidence that McConnell is the best location to serve as MOB 1. I am extremely confident that the Environmental Impact Statement will validate this decision. At McConnell, you will find mission success, mission expertise, and most important, a strong local engagement, participation and support network. Thank you for your time tonight. Senator Roberts looks forward to helping announce McConnell Air Force Base as the Air Force's Main Operating Base Number 1 Record of Decision in 2014.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_042\_D\_A

\* Mike Zamrzla provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

MR. ZAMRZLA: Good evening. I'm  
24 Mike Zamrzla, Deputy State Director for  
25 United States Senator Jerry Moran.

Lieutenant Colonel  
2 Richardson, Colonel Cargle, Mr. Clark,  
3 thank you for organizing this evening's  
4 hearing. It's a pleasure and an honor to  
5 have the opportunity to submit the  
6 following comments into the official  
7 record on behalf of Senator Moran.  
8 I couldn't be more proud that  
9 in May of this year McConnell Air Force  
10 Base was selected as the preferred  
11 alternative for the Main Operating Base  
12 for KC-46A tankers. This selection  
13 codifies what Kansans already know. We  
14 are and will continue to be the Air  
15 Capital of the World. We will continue  
16 to lead the way in aviation and air  
17 mobility support for the United States  
18 military at home and abroad. The  
19 selection process rewarded what we have  
20 at McConnell stretching beyond the  
21 capabilities of the base and our airmen,  
22 The efforts of the Friends of McConnell,  
23 the Wichita Chamber of Commerce, the  
24 Governors Military Council, the City of  
25 Wichita, the City of Derby and Sedgwick County are also credited for this  
2 selection. I'm encouraged that the  
3 Environmental Impact Study is well  
4 underway collecting data and relevant  
5 information to shine a light on all  
6 McConnell has to offer, including the  
7 great work that has already begun to plan  
8 for the transition from the KC-135s to  
9 the KC-46As. I trust the analysis from  
10 this study will confirm that McConnell is  
11 best suited for this mission from an  
12 operational and environmental perspective  
13 affirming McConnell's excellent scoring  
14 that occurred during the basing selection  
15 process. I believe the Record of  
16 Decision will validate that McConnell is  
17 and will continue to be the super tanker  
18 base for the nation as the home of the  
19 KC-46A.  
20 In addition to the honorable  
21 recognition and responsibility that comes  
22 with providing the Air Force Strategic  
23 Air Mobility, we know this will translate

#### M\_042\_D\_A

24 into an economic boost for the community  
25 as support for various phases gets underway to house and fly the new KC-46A  
2 tankers. Thanks to all the airmen and  
3 their families at McConnell for your hard  
4 work, dedication and exemplary  
5 performance which substantiate just how  
6 valuable and meaningful Team McConnell is  
7 to the air mobility mission. Thanks also  
8 to the Air Force and Air Mobility Command  
9 for conducting a thoughtful, objective  
10 and criteria-based selection process and  
11 Environmental Impact Study that will no  
12 doubt yield another round of positive  
13 results.  
14 Finally, I'm sure that many  
15 fellow Kansans have turned out tonight to  
16 inform the Air Force's decision. I also  
17 encourage all citizens to submit their  
18 views in writing to make the most of this  
19 important process. I look forward to the  
20 results of this study that will  
21 undoubtedly prove that because of  
22 McConnell's air refueling demand, reduced  
23 environmental impacts and overwhelming  
24 capacity, it is not only the preferred  
25 alternative for the Air Force, but the best choice as the nation's super tanker  
2 base. Very truly yours, United States  
3 Senator Jerry Moran.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_043\_D\_A

\* Toni Porter provided verbal comment at the McConnell Public Hearing 11/12/13; comment received via transcript from court reporter.

**MS. PORTER:** Good evening. Thank you for having me here tonight. Toni Porter. I serve as Congressman Mike Pompeo's District Director. I wanted to take this opportunity to offer Congressman Pompeo's continued support of the Air Force's selection of McConnell Air Force Base as the preferred alternative for the Air Force's very active duty station for the new KC-46A tanker. You see, McConnell is more than an Air Force base. It's a family. McConnell has a long and proud history of air refueling operations and brings an incredible amount of experience to bear in these operations. Each of these operations is about making sure that our men and women can stay in the fight and keep America safe. Each of these operations is about ensuring that we are ready to take on a mission no matter how long it takes. McConnell's mission is about taking care of our own. McConnell won an intense competition to be the Air Force's preferred alternative for the KC-46 tanker and that should be no surprise. Consider McConnell's two 13,000-foot runways which are ready to receive the KC-46A, or the fact that McConnell has the lowest military construction need to provide for the conversion from the KC-135 to the KC-46A. And it's obvious that the Air Force would benefit from McConnell's location in the heart of the country, an area of high air refueling demand which is perfectly situated to host the new KC-46A Regional Maintenance Training Center as well as provide continued support to the special operations community through its special operations air refueling training mission. But what makes it really obvious that McConnell is the right fit is because of the way it's integrated into all of our lives. Much as McConnell keeps the engines running for our Armed Forces all around the world, the men and women of McConnell keep the engines running for our community in Southcentral Kansas. Beyond the location, facilities and operational excellence that McConnell displays, community is something that sets McConnell even further apart from

#### M\_043\_D\_A

the rest of the field. Those of us in Southcentral Kansas often refer to McConnell as our military base. The Air Force personnel and the surrounding community have forged a very special relationship. Take, for instance, Friends of McConnell, a group of business, civic and government leaders who advocate for the installation and raise money for McConnell families in need and generally supports a strong and deep bond between the base and surrounding communities. The support goes both ways. Base personnel have gone out of their way to give the local community -- they sponsor the McConnell

Air Show, as an example, and Open House which gives the community an opportunity to see the base and what makes it a world-class installation. They also donate their time and energy generously to civic organizations such as Big Brothers, Big Sisters, Lions Club and The Boy Scouts of America. Although it's well known around here how great McConnell is, it's nice to be recognized outside of the community as well and McConnell has received more awards over the past 16 months than all other Air Mobility bases combined. The EIS and the formal Record of Decision will confirm what those of us who make this community our home already know. McConnell is home for so many of us, it should also be home to the KC-46A. Thank you.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_044\_D\_A

\* Senator Oletha Faust-Goudeau provided verbal comment at the McConnell Public Hearing 11/12/13; comment received via transcript from court reporter.

**MS. FAUST-GOUDÉAU:** Good evening.  
 25 For the record, I am Senator Oletha Faust-Goudeau representing the 29th  
 2 District of the Kansas Senate. I am here  
 3 this evening on behalf of the 29th  
 4 District to speak in support of the  
 5 KC-46A to be located at McConnell Air  
 6 Force Base. I am also here on behalf of  
 7 the members of the Southcentral  
 8 Legislative Delegation to support the  
 9 proposed action of the KC-46A to be  
 10 located at McConnell Air Force Base. I  
 11 am personally here tonight as Oletha  
 12 Faust-Goudeau to support this project  
 13 here in the City of Wichita as we are the  
 14 Air Capital City of the World. I remind  
 15 you. Also, I have had the pleasure of  
 16 flying on a KC-135 fuel tanker plane as  
 17 I, too, helped raise funds to support a  
 18 monument at the actual site of the KC-135  
 19 plane crash here in Wichita in 1965, and  
 20 during that time and speaking with many  
 21 who helped on that project, those fuel  
 22 tanker planes are somewhat outdated, and  
 23 so I truly support this project to  
 24 upgrade those aircrafts because it is so  
 25 important on those missions that those planes have capable aircrafts to refuel.  
 2 We here in Wichita here at  
 3 Wichita State University, NCAT and other  
 4 surrounding areas, the projects, we are  
 5 training so many of our young people to  
 6 go into aviation, and this would be the  
 7 perfect fit and the perfect project for  
 8 all the airmen and women in our city, our  
 9 wonderful Air Capital City of the World.  
 10 I also want to say on behalf  
 11 of the Southcentral Legislative  
 12 Delegation and Senator Mike Peterson who  
 13 represents McConnell in the Kansas  
 14 Senate, he wanted to be here tonight but  
 15 was unable to.  
 16 But again, I just close with  
 17 saying this is a worthy project. It  
 18 would also bring approximately  
 19 \$640 million to our state's economy, so I  
 20 urge you to certainly consider this  
 21 project being located in the City of  
 22 Wichita at McConnell Air Force Base.  
 23 Again, thank you for your time. I'm  
 24 done.

#### M\_045\_D\_A

\* Jim Howell provided verbal comment at the McConnell Public Hearing 11/12/13; comment received via transcript from court reporter.

**MR. HOWELL:** Good evening. My name  
 5 is State Representative Jim Howell  
 6 representing the 81st Legislative  
 7 District here in Kansas which includes  
 8 McConnell Air Force Base. Thank you for  
 9 coming out tonight. It is a great honor  
 10 and privilege to be able to speak on  
 11 behalf of KC-46A coming to Wichita,  
 12 Kansas to McConnell Air Force Base. I'm  
 13 also a candidate for Sedgwick County  
 14 Commission District 5 which includes  
 15 McConnell Air Force Base as well. I am  
 16 also Vice Chairman of the Southcentral  
 17 Legislative Delegation that Senator  
 18 Faust-Goudeau just spoke about. I am  
 19 also an Air Force veteran and work on  
 20 tankers in my civilian job. I have lived  
 21 in Derby for the last 22 years, 15 years  
 22 on the very northern edge of Derby just a  
 23 couple miles south of the end of the  
 24 runway. I want you to know something  
 25 I've learned as a State Representative, I have received thousands of e-mails on a  
 2 wide variety of topics from any comments  
 3 about concerns that people in my district  
 4 care very much about, but not one time I  
 5 have ever received a complaint or comment  
 6 negative about McConnell Air Force Base  
 7 or the planes flying overhead, I have  
 8 knocked on thousands of doors and had  
 9 many discussions with people at the doors  
 10 about a number of topics. Not one time  
 11 has anybody in my four years of  
 12 campaigning ever brought up any topic  
 13 negative to McConnell Air Force Base or  
 14 the airplanes flying overhead. In fact,  
 15 the opposite is true. I would tell you  
 16 we are addicted to airplanes in Wichita.  
 17 We love the KC-46, we love the KC-135.  
 18 We love the airmen that work on those  
 19 airplanes in McConnell Air Force Base.  
 20 We are used to the planes flying overhead  
 21 and it is not something we object to but  
 22 rather welcome the planes because they  
 23 represent the sound of freedom.  
 24 I would tell you there's a  
 25 recent happening up at the Naval Air Station at Whidbey Island. Whidbey  
 2 Island is being sued right now by a group  
 3 of citizens that says that they must use  
 4 headphones to block out the noise. I  
 5 know the KC-46 is a quieter airplane than  
 6 the KC-135. We kind of miss the days of

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_045\_D\_A

7 the B-1s and the F-16s and even F4s. The  
8 noise is not a problem and even as  
9 presented tonight, the noise would  
10 actually be less with the KC-46,  
11 obviously a positive choice for our area.  
12 We like the airplanes and that would be a  
13 positive for us as well.  
14 I want you to know that in my  
15 three years of serving in the  
16 Legislature, I have seen many pieces of  
17 legislation that have come before the  
18 military committees and the Legislature  
19 for consideration. These bills are the  
20 most universally supported measures  
21 receiving bipartisan approval. The state  
22 has a reputation that demonstrates  
23 military favor and wide-ranging support.  
24 We also recognize the great relationship  
25 we have with the Base. We know that Kansas has enjoyed more prosperity  
2 because of McConnell's presence. Today  
3 we are excited and anxious for the Next  
4 Generation's state-of-the-art new  
5 workhorse, the KC-46. It will be home  
6 here with people that love what that  
7 plane represents. We know that this is  
8 good for our community and is good for  
9 Kansas and the United States as well. We  
10 believe we are right for the needs of the  
11 Air Force, too. McConnell makes the most  
12 sense, I believe. Thank you for giving  
13 me the opportunity to encourage you to  
14 bring the KC-46 to us. We are ready.

#### M\_046\_D\_A

\* Jim Skelton provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. SKELTON:** Good evening. My  
20 name is Jim Skelton and I'm Chairman of  
21 Sedgwick County government. This Jim  
22 right here is my opponent. There's one  
23 thing we both agree on that the KC-46  
24 Alpha needs to come to McConnell Air  
25 Force Base, so on behalf of the Board of Sedgwick County Commissioners, thank you  
2 for this opportunity to speak in support  
3 of McConnell Air Force Base. I am  
4 confident that you will hear from a  
5 number of supportive individuals and  
6 groups this evening who want to assure  
7 you McConnell Air Force Base is in a very  
8 strong position to be the Main Operating  
9 Base for the Tanker Replacement Program.  
10 McConnell Air Force Base has always been  
11 a valuable neighbor and partner to  
12 Sedgwick County. We have watched with  
13 pride over many years as the airmen and  
14 women at the Base have adapted to changes  
15 in mission and aircraft. We are  
16 extremely proud to have the Super Tanker  
17 Base and the military personnel and their  
18 families here in Wichita, Kansas. We  
19 know that having McConnell Air Force Base  
20 provides a significant economic boost to  
21 our community and we are proud and we are  
22 able to provide things in our community  
23 for the military personnel and their  
24 families to make their stay here great.  
25 Sedgwick County supports quality of life programs like the Sedgwick County Zoo,  
2 Exploration Place, the Intrust Bank  
3 Arena. All help provide cultural and  
4 entertainment options. We encourage  
5 outdoor play through our great parks like  
6 Sedgwick County Park and Lake Afton  
7 Parks. We here in Wichita, Kansas have  
8 numerous connecting bicycle paths for  
9 bicycle enthusiasts. We partner with the  
10 higher education community also through  
11 partnerships with Wichita State, with the  
12 Wichita Area Technical College to provide  
13 adult learning opportunities. In 2010,  
14 the county built a National Center for  
15 Aviation Training, also known as NCAT, a  
16 state-of-the-art training center to  
17 support aviation, research and training  
18 for the aviation industry. We know that  
19 these are critically important factors  
20 for you and your personnel while they are  
21 stationed here and also a part of what

*A.7.3.10 McConnell AFB Draft EIS Comments (Continued)*

**M\_046\_D\_A**

22 encourages them to retire here as well.  
23 We are so pleased to have a long-lasting  
24 partnership with McConnell Air Force Base  
25 and we are proud of their role in expanding our nation's defense. We  
2 understand and appreciate how important  
3 it is that we work together as partners,  
4 neighbors and friends. And ladies and  
5 gentlemen, there's one other thing I  
6 would like to say. I live about two  
7 miles from the base as the crow flies.  
8 I've been an elected official for nine  
9 years and I have had not one complaint  
10 regarding McConnell, only compliments.  
11 Thank you very much.

**M\_047\_D\_A**

*\* Karl Peterjohn provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.*

**MR. PETERJOHN:** Good evening, Karl  
17 Peterjohn. I represent the 3rd County  
18 Commission District in Sedgwick County.  
19 I wanted to come up here and make a grand  
20 expression of points, but unfortunately,  
21 my six preceding speakers have beat me to  
22 the punch. I'm going to second their  
23 comments and thank you very much.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_048\_D\_A

\* Kathy Sexton provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MS. SEXTON:** Good evening, Kathy  
9 Sexton, City Manager of Derby. Thank you  
10 very much for this thorough report. I  
11 have read your report. The environmental  
12 information is helpful to our neighbor --  
13 the City of Derby being the closest  
14 neighbor to McConnell, we appreciate the  
15 numbers and the information about the  
16 noise and the people affected and that  
17 kind of thing. We are mentioned as the  
18 city in the report in terms of land use  
19 and preventing encroachment. We are  
20 encouraged by the report and certainly  
21 will continue to do that cooperation that  
22 the report recommends, that we continue  
23 to work to control the development in the  
24 area and to not have encroachment. It  
25 might help to know that for many years Derby has worked cooperatively with not  
2 only the folks at McConnell but also the  
3 civil engineering folks at the Pentagon  
4 to make sure that our local rules not  
5 only meet the Pentagon requirements but  
6 exceed them and we are one of the few  
7 communities in the country that do exceed  
8 them, as I understand it, and we have  
9 been a leader in that respect. We're  
10 proud of that. But I think the other  
11 thing I'm most proud of is that since  
12 those rules were adopted and approved by  
13 the Pentagon in 2008, that's been like  
14 five years, right, during that time I  
15 have been City Manager that whole time  
16 and I can say that I have not seen any  
17 time when the community of Derby has  
18 violated the rules that it agreed to  
19 follow. Our planning commission of  
20 volunteers, our City Council of  
21 volunteers has always followed through in  
22 supporting the rules that they passed.  
23 And that is not always easy. There are  
24 times when property owners say I want to  
25 build houses on this site, I want to build a business on this site and that is  
2 difficult, but we have been on record  
3 both staff and our elected and appointed  
4 officials as saying no sometimes when we  
5 feel like that would encroach upon the  
6 Base. And so just to sum up, we are very  
7 supportive and, of course, our actions of  
8 recent years have also been supported by  
9 Major General Timothy Byers and this  
10 calendar year in his written comments

#### M\_048\_D\_A

11 about Derby's cooperation indicating, I  
12 quote: Derby has diligently pursued  
13 compatible development within APZ 1 and  
14 2. Thank you very much.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_049\_D\_O

*\* Debbie Gann provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.*

**MS. GANN:** Hi, I'm Debbie Gann and  
 20 I am the 2013 Chair of the Wichita Metro  
 21 Chamber of Commerce. Thank you for the  
 22 opportunity to express the Chamber's  
 23 support for securing the KC-46A tanker  
 24 program at McConnell Air Force Base. I  
 25 recently read that mobility aircraft departs somewhere around the world every  
 2 two and a half minutes and they do this  
 3 24 hours a day, 365 days a year. Very  
 4 impressive. As a representative of the  
 5 business community, I can assure you that  
 6 business owners throughout the area are  
 7 extremely grateful for the wide role  
 8 McConnell plays in ensuring our safety  
 9 and our freedom. Our thanks to each of  
 10 you and to all of those in the Air  
 11 Mobility Command who make this possible  
 12 through your dedication to your mission.  
 13 The airmen at McConnell have a proven  
 14 track record of keeping our country and  
 15 our community secure which in turn allows  
 16 the Chamber business members to focus on  
 17 what we do best, creating jobs in  
 18 Southcentral Kansas. We also recognize  
 19 the economic impact that McConnell has on  
 20 Southcentral Kansas. We're very pleased  
 21 at the prospect of increased employment  
 22 at the base as a result of the new tanker  
 23 mission. These airmen and their families  
 24 are valuable residents of our community.  
 25 They participate in community programs, become members of area museums and  
 2 attractions, they volunteer their  
 3 services to local non-profits and they  
 4 purchase goods and services from our  
 5 businesses. Their children bring their  
 6 intellect to our schools, their creative  
 7 talent to our art programs and their  
 8 athletic gifts to our sports fields.  
 9 Their spouses provide an experienced  
 10 workforce to our businesses and increase  
 11 our community's volunteer pool. And the  
 12 retirees from McConnell who decide to  
 13 stay in this area continue to contribute  
 14 to the wellbeing and quality of life that  
 15 make Wichita such a terrific place to  
 16 live. McConnell families are an  
 17 essential element of our aviation-focused  
 18 community. As the home of world-class  
 19 aircraft manufacturers, aviation  
 20 suppliers and a well-trained aviation  
 21 workforce, McConnell Air Force Base is a

#### M\_049\_D\_O

22 vital partner in making Wichita, Kansas  
 23 the Air Capital of the World. This  
 24 award-winning base is well-prepared for  
 25 additional responsibilities and the Wichita Metro Chamber is pleased to  
 2 support this new mission. McConnell has  
 3 always demonstrated tremendous  
 4 cooperation with local businesses and  
 5 government entities and we consider them  
 6 a very compatible and extremely valuable  
 7 neighbor. We strongly encourage and  
 8 support the finalization of your decision  
 9 to place the KC-46A at McConnell Air  
 10 Force Base. Thank you.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_050\_D\_I

*\* Cathy McClain provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.*

**MS. MCCLAIN:** Good evening. I'm  
 15 Cathy McClain from Spirit AeroSystems.  
 16 At Spirit, I'm charged with leading and  
 17 directing four aircraft programs, but I'm  
 18 here tonight not only as a representative  
 19 of Spirit AeroSystems but as a retired  
 20 Air Force officer, a former wing  
 21 commander at McConnell Air Force Base and  
 22 an Air Force veteran who decided to come  
 23 home and call Wichita my new home and  
 24 raise my family here. Why is McConnell  
 25 Air Force Base the perfect location for these new KC-46As? It's because of its  
 2 central location. Our tankers from  
 3 McConnell can respond rapidly to a threat  
 4 across the Pacific or a threat in the  
 5 Middle East. McConnell tankers give  
 6 conflict response flexibility.  
 7 Additionally, the tankers at McConnell  
 8 Air Force Base being so closely located  
 9 to Air Mobility Command's Mobility  
 10 Training hub, Altus Air Force Base,  
 11 230 miles as the crow flies, allows those  
 12 two Air Force bases to achieve fuel  
 13 efficiencies. Within minutes of takeoff,  
 14 the planes from Altus Air Force Base and  
 15 McConnell Air Force Base can be flying in  
 16 formation and that is a benefit and a  
 17 cost savings to all of us as taxpayers.  
 18 So bottom line, McConnell Air Force Base  
 19 is quite simply the best location for our  
 20 response flexibility and the fact that we  
 21 can support the intensive training  
 22 requirements as this new KC-46A is made  
 23 part of our new fleet. For most of my  
 24 career, I've been associated with tankers  
 25 in one aspect or another. When I worked at Boeing, I led a team of software  
 2 engineers that are writing the code for  
 3 the new KC-46 boom to actually fly it,  
 4 and although Boeing is moving to  
 5 Oklahoma, those software engineers are  
 6 still here in Wichita writing that code.  
 7 And at Spirit AeroSystems, hundreds of  
 8 Spirit's employees are building the  
 9 forward fuselage, cockpit, if you will,  
 10 for the KC-46A as well as the fan cowl,  
 11 the fan ducts and the forward leading  
 12 edge of that aircraft. When we rolled  
 13 out the first forward fuselage at Spirit  
 14 AeroSystems, our customer, Boeing, and  
 15 the Air Force came here to celebrate with  
 16 hundreds of Spirit employees. Our Spirit

#### M\_050\_D\_I

17 employees are very proud of what they do  
 18 because they know what they are building  
 19 right across the ramp from you at  
 20 McConnell has direct impact on what you  
 21 do. I'm very proud to know that just  
 22 outside my office they're working on a  
 23 high-quality product on time and I am  
 24 very excited that outside my window one  
 25 day, I will watch a KC-46A that started here in Wichita return to Wichita. As a  
 2 former Air Force pilot who deployed and  
 3 have refueled over 4,000 aircraft over  
 4 Iraq, I want to say I'm very excited for  
 5 the men and women at McConnell Air Force  
 6 Base who will fly our new tanker as they  
 7 defend our freedom both here and abroad.  
 8 Thank you.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_051\_D\_A

\* Kurt Carpenter provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. CARPENTER:** Good evening, Kurt. Carpenter and I'm the Air Traffic Manager at Wichita Air Traffic Control Tower and TRACON, and on behalf of the FAA, we'd like to express our strong support for the McConnell Air Force Base with respect to its selection for Main Operating Base of the KC-46A tanker aircraft. At our facility, we don't only separate and control the aircraft in and out of Mid-Continent, we have a 30-mile radius roughly up to 15,000 that we support and that, of course, includes McConnell and other airports around the area such as Beech, Jabara, Hutchinson, many others, but we believe that this base should be here. There's obviously some economic benefits and other things that have been talked about tonight and will be talked about later, but the one thing I wanted to bring up tonight is the safety aspect. We have a big history of working the aircraft in and out of this area both for military and commercial. The FAA tower and radar approach control folks are highly trained and highly experienced in heavy jet activity as well as other military operations. And just to give you an idea of how much we do the work there and how much we -- the activity at Wichita just at Mid-Continent, the air traffic control tower handles 22,000 military operations per year averaging about 1800 per month, and of those almost 22,000, the local operations which we translate to either touch-and-go or training operations. And then the TRACON which again is the radar facility handles over 32,000 military operations. That's averaging over 2600 per month, and out of those over 30,000 were itinerant, meaning they either land at McConnell, Hutch or Mid-Continent. So as you see, that great amount of activity, adding a few more is not going to make any difference for us. In fact, our numbers have been down the last four to five years, so we welcome that opportunity to increase those numbers and keep our folks busy, keep them up to speed. To emphasize safety again a little more, we do have letters of

#### M\_051\_D\_A

agreement and procedures in place with McConnell Air Force Base to accommodate their traffic to seamlessly merge and blend that traffic into the overhead traffic that we currently have from the other airports. Also, we do provide a 24-hour service. We're open 24 hours a day, and again, that's radar guidance in and out of McConnell and the area. And we do one other thing about the airspace here. It is pretty wide open. There are MOAs, military operations areas, on virtually all sides of us within about a 40-mile area, and so we already have that military activity, we can accommodate that and, bottom line, right now we're ready to help the safety and service those tankers as soon as they get going here. We greatly appreciate the opportunity to comment on the project and we look forward to a positive outcome for McConnell Air Force Base. Thank you.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_052\_D\_O

\* Susan Erlenwein provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MS. ERLLENWEIN:** Thank you. My name is Susan Erlenwein. I'm the Director of Sedgwick County Environmental Resources and Household Hazardous Waste Facility. I'd like to thank Mr. Clark for his previous review of the NEPA and EIS. Many people don't realize how comprehensive the environmental impact statement is. It goes into great detail on the current soil conditions, water, surface groundwater, wetlands. It's very important to look at the air quality, the noise levels and socioeconomic justice, all sorts of things that compile into an EIS statement, and I think they did an excellent job in doing this report. It's very comprehensive and extensive. I've read many EIS reports and this one did not put me to sleep, so I appreciate that. It's very good. And if any of you have actually looked at it, it's well over 500 pages long and did an excellent job in looking at this. What's very important is that the EIS statement compares the current conditions, what's existing now and what will exist with changes, whether those are the construction changes that will go on or whether it has to deal with the air emissions from the aircraft or the noise levels of the aircraft. I'm very pleased that this came out very positive for our community. They looked at our current air quality conditions, noise levels, growth patterns and it came out very excellent. I'd like to thank you for your thorough report and I'm very supportive of this project. Thank you very much.

#### M\_053\_D\_A

\* John Schlegel provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. SCHLEGEL:** Good evening. My name is John Schlegel. I'm the Director of Planning for Sedgwick County and for the City of Wichita, and my comments tonight are about land use around McConnell Air Force Base. In 2005, Sedgwick County and the cities of Wichita and Derby participated in the development of a Joint Land Use Study, also called a JLUS, for McConnell Air Force Base. The purpose of the study was to analyze the impacts of urban development around McConnell for the Base's current mission and other possible future missions. The JLUS in 2005 was prompted by the completion of an Air Installation Compatible Use Zone Study, also called an AICUZ, for McConnell that was completed in 2004.

The updated AICUZ study showed that the noise exposure area around McConnell had shrunk considerably from that of the previous B-1 Bomber mission, and many Wichitans will remember the B-1 Bomber mission being stationed at McConnell. The 2005 JLUS assessed future development potential around the base and existing and future land use conflicts. It listed recommendations for changes in local government land use regulation and in local real estate practices that could help minimize conflicts between land use around the base and base operations. Sedgwick County, Wichita and Derby have made significant progress in implementing these recommendations, and here are a few. First of all, for decades, Sedgwick County/Wichita have jointly administered airport overlay districts in the clear zones and accident potential zones at each end of the McConnell runways. These overlay districts have helped keep the wrong types of land uses out of these zones. As a result of the JLUS, these regulations were strengthened even further to clarify that the intent of the airport overlay district is to prevent the concentration of large bodies of people and residential development in these zones. Wichita and Sedgwick County also adopted the Air Force base protection overlay district as a result

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_053\_D\_A

9 of that JLUS. The zoning overlay  
10 surrounds the base and restricts building  
11 heights to 25 feet. Its purpose is to  
12 prevent -- is to protect the base from  
13 possible terrorist activities by  
14 preventing observation and launching of  
15 attacks. In addition, Wichita Area  
16 Association of Realtors has incorporated  
17 into its disclosure forms a notice that  
18 McConnell Air Force Base is an  
19 operational base and operates 24 hours a  
20 day and planes fly out of the base and  
21 they generate noise. It goes on to  
22 explain how a potential buyer can get  
23 more specific information so that we have  
24 informed buyers. And since I have the  
25 stop sign there, what I'd like to do is thank the Air Force for giving us this  
2 opportunity to testify. We are proud  
3 that McConnell and its personnel that  
4 serves its current mission to have them  
5 as members of our community, and we look  
6 forward to having them as a vital part of  
7 our community for years to come. Again,  
8 thank you for this opportunity

#### M\_054\_D\_O

\* Claudio Ferraro provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. FERRARO:** Good evening. I'm  
13 Claudio Ferraro. I'm the Senior  
14 Administrator for Via Christi St. Joseph  
15 Hospital and clinical service lines. I'm  
16 a past honorary wing commander and a  
17 current member of the Friends of  
18 McConnell organization. Via Christi  
19 Health is the largest provider of health  
20 care services in Kansas with its origin  
21 dating back to 1889. Based in Wichita,  
22 we serve Kansas and Northeast Oklahoma  
23 through our doctors, hospitals, senior  
24 villages and health services. I'm  
25 honored to have the privilege to share some information about the state of  
2 health services capabilities here and how  
3 we are positioned to collaborate and  
4 support McConnell Air Force Base in its  
5 role as the home for the KC-46A tanker.  
6 Wichita and Southcentral region of the  
7 state are extremely fortunate to have  
8 world-class health services across the  
9 continuum from primary care to the most  
10 acute care services. Via Christi, HCA  
11 Wesley and other health care providers  
12 collectively provide some of the most  
13 high intensity care in services that are  
14 in place to augment McConnell's  
15 capabilities to ensure its mission is  
16 always in a state of readiness. We are  
17 here to serve its airmen, their  
18 dependents and its many civilian  
19 employees and their families. Some  
20 highlights of our collective capabilities  
21 include: Five acute care hospitals, four  
22 specialty hospitals, maternal fetal  
23 medicine, Level 3 NICU facilities and the  
24 most modern birth facilities and  
25 services, state of the art cancer treatment, cancer research and support  
2 services, wound care centers, Level 1  
3 trauma centers and ERs specializing in  
4 pediatric care, comprehensive pediatric  
5 outpatient/inpatient ERs, a regional burn  
6 center, accredited cardiac, neuro and  
7 epilepsy programs, joint commission  
8 accredited stroke centers, rehabilitation  
9 hospitals, a behavioral health hospital  
10 In collaboration with KU, Wesley and  
11 Via Christi, over 250 residents are  
12 trained in 13 residency programs here in  
13 Wichita. We have an extensive network of  
14 primary care, imaging, ambulatory surgery

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_054\_D\_O

15 and rehab clinics that exist throughout  
16 the region. Wichita is home to the  
17 Robert J. Dole VA Medical Center serving  
18 thousands of veterans across many Kansas  
19 counties for 75 years. As an active  
20 supporter of McConnell in a variety of  
21 capacities over the years, it is clear  
22 that this community and the health care  
23 sector have had a long and rich tradition  
24 in supporting McConnell since its  
25 inception. In addition to strong partnerships in helping to ensure that  
2 McConnell maintains its mission  
3 readiness, we have been honored to serve  
4 side by side on base and in the community  
5 from air shows to working collaboratively  
6 during periods of local and regional  
7 disasters. Via Christi is very pleased  
8 the Air Force selected McConnell to be a  
9 preferred site for the new KC-46A tanker  
10 and we collectively stand behind and with  
11 our military colleagues in offering our  
12 support in these final stages of making  
13 this designation permanent. McConnell  
14 Air Force Base has been a tremendous  
15 asset to our Southcentral Kansas  
16 community, both from an economic and  
17 community partner standpoint. We believe  
18 there is no better choice among the site  
19 options being considered, therefore,  
20 Via Christi pledges our full support of  
21 McConnell Air Force Base and we stand  
22 ready to assist the Air Force and our  
23 community in the process of securing the  
24 final selection of the base as the home  
25 for the KC-46A tanker. Thank you.

#### M\_055\_D\_O

\* Jack Pulley provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. PULLEY:** I'm Jack Pulley. I'm  
6 the Fleet Manager for the Davis-Moore  
7 Auto Group, but I'm here this evening as  
8 president of the Friends of McConnell. I  
9 thank you for the opportunity to speak on  
10 behalf of the Friends of McConnell. This  
11 is our region's civilian support  
12 organization for McConnell Air Force  
13 Base, its airmen and families. The  
14 activities and wide range of support that  
15 Friends of McConnell provide speaks  
16 volumes for the respect and admiration  
17 our businesses and residents have for the  
18 airmen at McConnell Air Force Base. If  
19 you would allow me to list just a few of  
20 the things that we've supported in the  
21 last few months. The annual and  
22 quarterly awards. We provide the money  
23 that give awards to the winners. The  
24 enlisted spouses has a program called  
25 Operation Holiday Surprise and what this is is E-4 and down, we go and give them,  
2 actually pay their grocery bill when they  
3 check out at Christmastime and  
4 Thanksgiving time. The Officers' Spouses  
5 Scholarship Fund, McConnell top three  
6 senior NCO induction. Quarterly, we  
7 support the Hearts Apart which we have a  
8 dinner for the deployed's spouses, the  
9 Folds of Honor Golf Tournament, the  
10 Airmen's Council, the annual awards  
11 program of the 931st Air Refueling Wing  
12 and the 184th Intelligent Wing, integral  
13 parts of Team McConnell. In addition,  
14 the base can always count on us, Friends  
15 of McConnell, to support the Tops in Blue  
16 performance when they come, the open  
17 house and air shows when we have them,  
18 Air Mobility Command rodeo, we send  
19 people with them and we cook for them and  
20 entertain them. We always provide for  
21 the Air Force ball and a number of  
22 squadron group and family celebrations  
23 throughout the year. We are an Air Force  
24 town. Air Force families are evident in  
25 every aspect of our communities. They're evident in our schools, in our churches,  
2 community theaters, parades, recreational  
3 programs, especially charitable and  
4 volunteer organizations, civic clubs and  
5 neighborhood associations. The merging  
6 of military and civilian is invisible.  
7 Here, we are all citizens of one

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_055\_D\_O

8 community where the uniform you wear does  
9 not define you, it enhances you.  
10 Sometimes we go an extra mile. There  
11 have been instances that have occurred  
12 that the Friends of McConnell have  
13 stepped up. A couple examples, a  
14 deployed spouse came to her house around  
15 the Christmastime only to find her car on  
16 bricks or on blocks and her house cleaned  
17 out. And with a quick e-mail to all of  
18 our Friends of McConnell, we raised  
19 thousands of dollars to help her restore  
20 her life and her Christmas. Another  
21 instance was a young airman family that  
22 had a sick daughter that they couldn't  
23 afford to get to the other community that  
24 they needed to take her to for services.  
25 Again, we raised the money and helped that young family take their daughter to  
2 that facility. And taking the McConnell  
3 message into the community is something  
4 we do frequently. Continual education of  
5 our citizens about the value of McConnell  
6 is something we relish doing, speaking to  
7 civic clubs, church groups and veterans  
8 groups whenever possible. Part of  
9 McConnell's mission statement is to  
10 guarantee that an assignment to McConnell  
11 is the best assignment of an airman's  
12 career, and judging from the number of  
13 compliments we receive, we think we're  
14 doing a pretty good job. Thank you for  
15 the opportunity to speak in support of  
16 McConnell Air Force Base becoming the  
17 best assignment for the new KC-46A  
18 tanker. Thank you very much.

#### M\_056\_D\_O

\* Wayne Roberts provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. ROBERTS:** Good evening. My  
24 name is Wayne Roberts and I'm Chairman of  
25 the Tanker Task Force and the Joint Military Committee. The Tanker Task  
2 Force was formed when the competition  
3 began for the basing of the KC-46A. Our  
4 community leaders wanted to make sure we  
5 had a targeted approach to explain to Air  
6 Force officials why McConnell was the  
7 logical choice for the MOB 1. The  
8 Wichita Metro Chamber spearheaded  
9 bringing together all the interested  
10 parties into a task force that was  
11 targeted with getting out the message in  
12 a clear and concise manner. Our task  
13 force was represented by the Governors  
14 Military Council, Friends of McConnell,  
15 the Wichita Metro Chamber, the Wichita  
16 Independent Business Association,  
17 Sedgwick County, the cities of Wichita  
18 and Derby and retired Air Force  
19 personnel. The base has won over 80  
20 awards in the past 18 months. That's  
21 more than all the other Air Mobility  
22 Command bases put together. It's a  
23 strong case for the 46-A beddown at  
24 McConnell Air Force Base. You logically  
25 want to put the best planes where you  
have the best personnel and the best  
2 performance. As you've heard from other  
3 speakers, this community wholeheartedly  
4 supports the airmen at McConnell. We've  
5 embraced them as an integral part of our  
6 community and continue to look for ways  
7 to show them that we recognize and  
8 appreciate the sacrifices they make to  
9 keep us free. We have heard time and  
10 time again from airmen to base leadership  
11 that they have never seen the support to  
12 the level we have in communities  
13 surrounding the base, and that's why so  
14 many of them return to Wichita and retire  
15 once they have completed their military  
16 service. We have over 10,000 retirees in  
17 Wichita, Derby and surrounding  
18 communities. During their military  
19 careers, they have been stationed in  
20 numerous locations both in the U.S. and  
21 around the world, and there is no greater  
22 compliment to have them select Wichita  
23 and our area as their final home. Our  
24 governmental entities, our business

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_056\_D\_O

25 organizations and our citizens wholeheartedly support McConnell Air  
2 Force Base and look forward to being  
3 MOB 1 for the 46-A. Thank you.

#### M\_057\_D\_A

\* Victor White provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. WHITE:** Good evening. I'm  
9 Victor White, Director of Airports for  
10 the Wichita Airport Authority. On behalf  
11 of the City of Wichita Airport Authority,  
12 we would like to express our strong  
13 support for McConnell Air Force Base with  
14 respect to its selection as the Main  
15 Operating Base of the KC-46A tanker  
16 aircraft. The Airport Authority is the  
17 owner and operator of both Wichita  
18 Mid-Continent Airport and Colonel James  
19 Jabara Airport, the general aviation  
20 field here in the area. We believe that  
21 the Air Force should select McConnell for  
22 this mission for the following reasons  
23 that are directly related to the services  
24 and facilities that we have successfully  
25 and proudly provided to McConnell and other military bases for a number of  
2 years. There are indeed synergies and a  
3 partnership between Mid-Continent Airport  
4 McConnell. McConnell tanker aircraft  
5 routinely conduct an average of 35 or  
6 more operations per month at  
7 Mid-Continent Airport. This includes  
8 touch-and-go operations as well as full  
9 stop, takeoffs and landings which are  
10 used for pilot training and efficiency  
11 missions. Mid-Continent Airport is open  
12 and available for McConnell aircraft in  
13 the event of weather, mechanical or  
14 emergency diversion situations. Just  
15 last week, for example, Mid-Continent  
16 hosted four KC-135 tanker aircraft for a  
17 couple of days during inclement weather  
18 when the instrument landing system at  
19 McConnell was under repair. The FAA air  
20 traffic control tower and radar approach  
21 control operators at Mid-Continent are  
22 highly trained and experienced in  
23 handling heavy jet tanker traffic and  
24 other military aircraft operations.  
25 Because of the airport's full service and all-weather capabilities, it has become  
2 the facility of choice for not just  
3 McConnell aircraft but those from other  
4 Air Force bases and other military  
5 services as well who routinely operate in  
6 and out of Mid-Continent. Our fixed base  
7 service operators have fueling  
8 capabilities and government contracts  
9 which permit them to provide aircraft  
10 refueling to literally any military

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_057\_D\_A

11 aircraft. The airport has plenty of ramp  
12 space to accommodate the temporary  
13 parking and support operations for  
14 tankers during a stop here. The airport  
15 has a 24-hour air traffic control tower  
16 and radar approach control which  
17 currently provides radar guidance to  
18 McConnell aircraft. The airport has a  
19 24-hour airport police and fire  
20 department which is capable of providing  
21 emergency services and security  
22 protection for tanker aircraft while on  
23 the ground. The airport has inspectors  
24 from U.S. Customs and Border Protection  
25 to handle inbound international aircraft as well. Other Air Force bases in  
2 Oklahoma and throughout the region use  
3 Mid-Continent for pilot training already  
4 due to our capabilities and because air  
5 traffic here is less than in surrounding  
6 states. There are approximately 1200  
7 military operations a month here as a  
8 result of the airport being the facility  
9 of choice in the region. Because those  
10 aircraft come to Mid-Continent to train,  
11 it leaves McConnell free to operate  
12 without any interference. The airspace  
13 surrounding Wichita is relatively  
14 uncongested and has plenty of capacity to  
15 handle many more operations than  
16 currently come into both McConnell and  
17 Mid-Continent. And this part of the  
18 country has wide open airspace, clear  
19 skies and outstanding weather that is  
20 conducive to the placement of air  
21 refueling flight tracks by the tankers.  
22 One of the reasons for that is that these  
23 tracks were established in areas that  
24 don't conflict with highly used airliner  
25 routes. We greatly appreciate this opportunity to comment on this project  
2 and look forward to a positive outcome in  
3 favor of McConnell. Thank you

#### M\_058\_D\_I

\* Diana Alexander provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MS. ALEXANDER:** Good evening.  
9 Hello. I'm Diana Alexander and I do  
10 appreciate this opportunity to comment on  
11 the 46-A tanker issue and the awarding of  
12 this contract to McConnell. I do believe  
13 that they really truly are the best  
14 choice as a lifelong Wichitan, and also  
15 part of the reason why I am here is  
16 because of the tragedy that happened in  
17 1965 on 21st and Platt. My parents lived  
18 at 21st and Grove and in listening to the  
19 other speakers and watching their  
20 presentation, I do think that McConnell  
21 would be the best place for it because  
22 they seem to be -- their safety record is  
23 quite good with the KC-135s. There  
24 hasn't been a repeat of what happened  
25 that day. And also I was looking at the specs on the KC-46 and if it can survive  
2 a nuclear attack, I'm thinking that it's  
3 probably a bit more at the very least  
4 crashworthy than the KC-135. And I also  
5 feel that another thing that should be  
6 considered is the -- I would hope that  
7 even though Boeing has left our fair city  
8 that the close relationship between  
9 McConnell and Boeing will continue and  
10 that they will be able to put in input on  
11 the KC-46A. And in closing, another  
12 thing that I am concerned about is if  
13 there's any emergency plans that might be  
14 put into place or any sort of disaster  
15 training scenarios that could be put into  
16 place to avoid -- if a tragedy like that  
17 would happen again, God forbid, we don't  
18 want that and I'm thinking -- and, like I  
19 said, I was looking at the specs of the  
20 KC-46 and I don't think that's likely,  
21 but we do need to make preparations for  
22 and plans for disasters whether they  
23 occur or not. Thank you very much.  
24 Goodbye.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_059\_D\_I

\* Mr. Skelton provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. SKELTON:** By the way, just to  
 4 clear one thing up, I'm not related to  
 5 Councilman Skelton. I grew up in  
 6 Syracuse, New York and I spent 30 years  
 7 in the United States Air Force. I'm a  
 8 retired Chief Master Sergeant and why do  
 9 I live here now. I was stationed here  
 10 back when there were missiles here, so  
 11 you can see I'm old. But anyways, I came  
 12 back here after I retired out of the Air  
 13 Force because this was a great place to  
 14 live. When I was stationed here, I said  
 15 I've got to come back here to live. And  
 16 the reason I do is I'll explain this to  
 17 you in the best way I can. Everybody  
 18 else has had an opportunity to say  
 19 something that was very well for this  
 20 community. But anyways, I get the  
 21 opportunity every class that graduates  
 22 the young airmen that go through their  
 23 first leadership class at McConnell Air  
 24 Force Base, I have the opportunity to  
 25 speak to them and I have done that for 14 years and I always ask this question.  
 2 How many of you are college graduates and  
 3 how many of you are going to college.  
 4 It's surprising how many of our young  
 5 airmen today are going to college here.  
 6 We have the best opportunities any place  
 7 for young airmen to go to college. And  
 8 the reason I care about young airmen is  
 9 because I had a lot of them that worked  
 10 for me and I had a lot of them that I  
 11 cared about, worried about and thought  
 12 about what was going to happen to them in  
 13 their lives, and one of the most  
 14 important things to the people that fix  
 15 these airplanes and fly them is that  
 16 their families are going to be okay while  
 17 they're gone and that they have an  
 18 opportunity in life to get ahead. This  
 19 is the best place they can go to  
 20 technical school here, as a matter of  
 21 fact, they can learn to fly here. They  
 22 teach at -- K-State has one of the best  
 23 flying there is. But the opportunities  
 24 here for the young airmen that we have  
 25 and even the young officers that we have today are great, and if there's any one,  
 2 I don't know what it is. You probably  
 3 heard a good friend of mine that works  
 4 for Davis-Moore came out here and talked  
 5 and what goes on. I think this is one of

#### M\_059\_D\_I

6 the greatest places for young people to  
 7 come for opportunities in their families,  
 8 in their future for them because, as you  
 9 know, when we go to war, it's not fun.  
 10 I've been there and I did that and it's  
 11 not a lot of fun. The biggest thing you  
 12 worry about is your family. In Vietnam  
 13 when you used to want to talk to your  
 14 families on the phone and your wife  
 15 called, you had to get ahold of your wife  
 16 and you finally got ahold of her and you  
 17 always went through the Mars station and  
 18 all these people plugged you in and you'd  
 19 call your wife and she'd say the washing  
 20 machine's broke, honey, and you said,  
 21 well, get it fixed. And she'd say over  
 22 and it would come to you. The next time  
 23 you finally got ahold of her, she would  
 24 write a letter and say I got a new wash  
 25 machine. But anyways, the things that happen today people worry about, and we  
 2 want to make it less worried for these  
 3 kids and these men that fly these  
 4 airplanes as they can, and McConnell Air  
 5 Force Base and this community does an  
 6 excellent job. I am proud to have the  
 7 opportunity to be called a Kansan. And  
 8 just to close I'll say this. I went back  
 9 to New York for my 60th high school  
 10 graduation and I was asked this question,  
 11 what do you think you're doing living in  
 12 Kansas, and I always say it's the best  
 13 place of all the places that I've lived  
 14 is McConnell Air Force Base in Kansas. I  
 15 think that the young men that come here,  
 16 it's the most important thing -- you can  
 17 have all the Environmental Impact Studies  
 18 and everything you want to, but you want  
 19 to worry about the young people flying  
 20 and fixing them that them and their  
 21 families have a good place to live.  
 22 Thank you very much for this opportunity.

### A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

#### M\_060\_D\_I

\* David Hitchcock provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. HITCHCOCK:** Good evening,  
 3 everyone. My name is David Hitchcock. I  
 4 spent 23 years at Boeing, part of which  
 5 time I was a government contracts  
 6 manager, in interim contractor support  
 7 for the ECP-405 program concerning the  
 8 KC-135s and also fleet support. So I say  
 9 that only to convey to you that my  
 10 interest in the KC-46A is not a casual  
 11 interest. There's little I can say that  
 12 hasn't already been said, but in hearing  
 13 everything that has been said both about  
 14 McConnell Air Force Base and Wichita and  
 15 the surrounding communities, I'm reminded  
 16 of the slogan that the Phillips 66  
 17 company used to have, it's performance  
 18 that counts, and I would ask all our good  
 19 representatives of the Air Force who are  
 20 with us tonight to remember that. I know  
 21 we are supposed to speak to the EIS, but  
 22 I would like to stress that if it is  
 23 performance that counts, please consider  
 24 what you have heard from so many of my  
 25 fellow citizens tonight. I'm here only as a citizen. I am retired, but I follow  
 2 what McConnell does very closely and I  
 3 would like to endorse everything that has  
 4 been said. If I could speak to one point  
 5 concerning the EIS, I heard some  
 6 discussion about noise. Well, I first  
 7 became acquainted with McConnell back in  
 8 the early 1950s when they were training  
 9 B-47 flight crews and maintenance people  
 10 to service that airplane. Then came the  
 11 F-105, then came the F-4 and after that  
 12 came the F-16 and the B-1 Bomber. We did  
 13 have missiles for a time but, thank God,  
 14 we did not hear much from them by the way  
 15 of noise. And finally, the KC-135  
 16 tankers. I think the gentlemen and  
 17 ladies from the Air Force know by now  
 18 that we're married, in effect, to  
 19 McConnell Air Force Base. So I hope that  
 20 as you consider the findings of the EIS  
 21 and compare those with the performance of  
 22 McConnell, you will leave this meeting  
 23 assured that this community does support  
 24 McConnell, we're proud of their mission,  
 25 and if there are any EIS issues that need to be addressed in the positive spirit  
 2 that both we and McConnell have, those  
 3 will be well taken care of. I thank you  
 4 for this opportunity. Wish you all a  
 5 good evening.

#### M\_061\_D\_O

\* Tim Witsman provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

**MR. WITSMAN:** Thank you very much  
 10 for the opportunity. I'm Tim Witsman and  
 11 I'm President of the Wichita Independent  
 12 Business Association. I'll have very  
 13 short remarks and they're really about  
 14 the support of the business community for  
 15 McConnell. Wichita Independent Business  
 16 Association/Kansas Independent Business  
 17 Coalition, which we call WIBA, is an  
 18 association of nearly 500 Kansas  
 19 businesses that are not publicly traded  
 20 companies. WIBA's been in existence for  
 21 over 82 years. We have partnered with  
 22 the Wichita Regional Chamber of Commerce  
 23 to establish a Joint Military Affairs  
 24 Committee. The preponderance of our  
 25 members do not directly gain from the presence of McConnell Air Force Base. We  
 2 are, however, keenly aware of McConnell's  
 3 importance and pay more than lip service  
 4 to supporting the base and its mission.  
 5 WIBA's Chairman Elect, Wayne Roberts, is  
 6 Chairman of the Joint WIBA Wichita Area  
 7 Chamber Military Affairs Committee and  
 8 has played a lead role in demonstrating  
 9 the community support for the mission of  
 10 home base for the new tanker fleet. In  
 11 June, a representative from McConnell was  
 12 the featured speaker at WIBA's monthly  
 13 luncheon, and on Tuesday, the 25th, I  
 14 will introduce the Vice Commander of the  
 15 Wing to a presentation of over 200 people  
 16 at Wichita Downtown Rotary. We have  
 17 members who are Friends of McConnell and  
 18 some who are also Golden Eagles and I  
 19 served four years as an honorary  
 20 commander for mission support out there.  
 21 You may be certain that the Wichita area  
 22 business community is deeply engaged in  
 23 ensuring the growth of the healthy  
 24 partnership between McConnell Air Force  
 25 Base and the Southcentral region of Kansas. If there are any ways that we  
 2 might be helpful to the review team, we  
 3 stand ready to respond. Thank you

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_062\_D\_I

\* Brian McDaniel provided verbal comment at the McConnell Public Hearing 11/12/13, comment received via transcript from court reporter.

MR. MCDANIEL: Greetings, everyone.  
 9 Thanks for the opportunity. My name is  
 10 Brian McDaniel. I spent 12 years out  
 11 here at McConnell, grew up around  
 12 Wichita. Where Cedar Crest is now  
 13 located, we farmed that plus a half mile  
 14 east -- we had from the creek to half  
 15 mile east of 119th Street and a half mile  
 16 north, so I have been very fortunate --  
 17 three companies owned me, we don't own  
 18 companies, they own us, and the clients  
 19 are the people who really end up giving  
 20 us directions, and having been an air  
 21 traffic controller for 12 years in  
 22 Vietnam, Greenland, California, many  
 23 different places, having trained many,  
 24 many air traffic controllers right out  
 25 here at McConnell, I say thank you for the opportunity to possibly have the  
 2 C-46A at McConnell. Thank you and good  
 3 evening.

M\_063\_D\_I

KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN  
 OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL  
 IMPACT STATEMENT  
 Public Hearing Written Comment Form

For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION: WICHITA, KS

DATE: 11-14-2013

I LIVED UNDER THE FRIGHT DATA FOR 18 YRS.  
 DURING THE B1 ERROR. ALWAYS KNEW KNOWING  
 THEY WERE THERE, EVEN WHEN THE WINDOWS  
 RATTLED.

WOULD LOVE TO SEE THE TANKERS FLYING OUT OF  
 WICHITA.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: JAMES A. DOWEN

Organization: -

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
 U.S. Air Force, AFCEC/CZN,  
 2261 Hughes Ave., Ste. 155  
 JB SA Lackland AFB, TX 78236-9853

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

Mr Reynolds

11-15-2013

M\_064\_D\_I

M\_065\_D\_A

I was unable to attend the meeting in Wichita regarding the new tankers being assigned to McConnell AFB. So I wanted to make my views known. As a member of the Wichita community, I fully support the new tankers being assigned to McConnell AFB. With the long term strong relationship between McConnell AFB, serving and Wichita, the new tanker mission assigned to McConnell appears to be a perfect fit.

I am a member of the Board for the Regional Chapter of the American Red Cross located in Wichita. Our Red Cross Chapter enjoys a strong relationship with McConnell AFB which would be continued should the Base be assigned the new tankers. Red Cross has volunteers at the Base assisting in the Pharmacy and we assist with our service to the armed forces. The community strongly endorses and recommends the KC 46A be assigned to McConnell AFB. Sincerely, Denise Spissell



IN REPLY REFER TO:  
NATURAL RESOURCES (405) 247-6673

UNITED STATES DEPARTMENT OF THE INTERIOR  
BUREAU OF INDIAN AFFAIRS  
SOUTHERN PLAINS REGION  
BRANCH OF NATURAL RESOURCES  
P.O. BOX 368  
ANADARKO, OKLAHOMA 73005

Ms. Jean Reynolds  
2261 Hughes Ave., Suite 155  
JBSA Lackland, TX 78236-9853

Dear Ms. Reynolds:

Thank you for the opportunity to review the draft Environmental Impact Statement (EIS) for the proposed KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1). We have reviewed the draft EIS, as well as the maps and supporting information, and have determined that there are no tribal or individual Indian trust lands under the jurisdiction of the Southern Plains Region within the study area of the draft EIS.

If any additional information or clarification is needed, please contact David Anderson, Regional Environmental Scientist, at [REDACTED]

Sincerely,

*[Signature]*  
ACTING Regional Director

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

M\_066\_D\_I

M\_066\_D\_I

**KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN ENVIRONMENTAL IMPACT STATEMENT**  
**Public Hearing Written Comment Form**  
For more information or to submit comments online, please go to: [www.kc-46a-beddown.com](http://www.kc-46a-beddown.com)

PLEASE PRINT LEGIBLY.

LOCATION:

DATE:

Metropolitan Complex Wichita, KS 11-12-12

We support the KC-46A FTU and MOB 1 proposal location for McConnell AFB Wichita, KS because we believe this location provides the best climate and space availability of all the four locations under current consideration. Further Wichita, KS could provide necessary manpower support and it would greatly enhance Wichita economy.

\*\*\*\* CONTINUE ON BACK FOR MORE SPACE \*\*\*\*

Individual respondents may request confidentiality. If you wish to withhold your name or address from public review or from disclosure under the Freedom of Information Act (FOIA), you must state this prominently at the beginning of your comments. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals or officials representing organizations or businesses, will be made available for public inspection in their entirety.

Name: Jim & Margie Eckles

Organization: Retired Navy

Address: [REDACTED]

City/State/Zip: [REDACTED]

Please turn in this form at the registration desk or mail by 9 December 2013, to:

Ms. Jean Reynolds  
U.S. Air Force, AFCEC/CZN,  
2261 Hughes Ave., Ste. 155  
JBAS Lackland AFB, TX 78236-9853

Continuation Page

McConnell AFB maintains up to date facilities and space for additional construction.

Thank you for your input.

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

Congress of the United States  
Washington, DC 20515

M\_067\_D\_A

M\_067\_D\_A

December 5, 2013

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support,  
United States Department of the Air Force  
Building 171, Kelly Annex, Lackland AFB, TX 78226

Mr. Sciabica,

We recently reviewed the Air Force's Draft Environmental Impact Statement (EIS) concerning the basing of the KC-46A training mission which makes a strong technical case in favor of designating McConnell Air Force Base (AFB) as the Main Operation Base (MOB 1) "preferred alternative" for the active duty operational mission. We strongly believe that this is an excellent decision, and one that is based on detailed analysis conducted by the United States Air Force's (USAF) Strategic Basing Process. We would like to share a number of additive factors below that reaffirm the report's comprehensible conclusion; McConnell AFB is the ideal location as the military's premier air refueling installation.

*Facilities and Location*

McConnell has the infrastructure capability to support the mission and to centralize the Air Force's KC-46A training. As the EIS report clearly details, McConnell's facilities are unmatched. McConnell AFB was in a truly unique situation during the analysis process; as the KC-135 mission, the KC-46A's predecessor aircraft, was stationed at McConnell, the installation had tremendous facility infrastructure already in place, which was necessary to support a new mission like the KC-46A. The runway support, hangar space, fueling storage, ramp capacity, and aircrew and maintenance training system facilities at McConnell are second to none. The tanker pilots will also have access to three exceptional auxiliary airfields, Clinton-Sherman Airport, Forbes Field, and the Wichita Mid-Continent Airport.

Additionally, McConnell has the lowest military construction costs, it is located in a region of high air refueling receiver demand, and will require the lowest manpower adjustments of all the candidate installations considered. McConnell is the ideal location for the KC-46A Regional Maintenance Training Center and will be in close relations to the Special Operations Air Refueling training mission, which is based in the Southeastern part of the United States.

*A Successful History*

McConnell was selected as the Main Operating Base (MOB 1) for a wealth of reasons, but its successful history of operation with the KC-135 tanker was one of the most obvious and significant. After receiving the first KC-135 tankers in 1971, McConnell was instantly a major force in the refueling aspect of aircraft operations. After years of

effective service and successfully retaining some of the most high-skilled airmen and women in the world, McConnell became the principal location for tanker pilots. With the 931st Air Refueling Wing and the 22nd Air Refueling wing completing the KC-135 mission during demolition and reconstruction activities at McConnell, the transition to the new KC-46A mission will be administered by experts in air refueling operations.

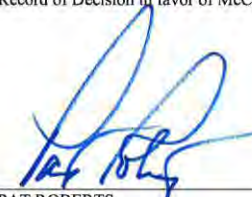
By bringing the KC-46A mission to McConnell as the Air Force begins to retire the KC-135 mission, base leadership and the community can be assured that not only will the transition be significantly easier than alternative bases, but that the continuation of this mission, which will house the next generation of aircraft and pilots, will ensure the installation will continue to play a crucial role in military operations for decades to come.

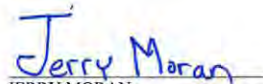
*Community Support*

Kansans have enthusiastically demonstrated their support for the Air Force and McConnell AFB for decades. More recently, Kansan citizens, including decision-makers at the local and state levels, have strongly supported bringing the KC-46A mission to McConnell. The support stems from successfully completing the KC-135 mission, which brought an immense amount of pride to the McConnell community. The community's proactive steps to manage growth around McConnell Air Force Base and protect it from encroachment are symbolic of the prodigious local support. The state and local governments, in coordination with military installations, have come together to ensure noise contours, accident zones, and to promote air quality initiatives.

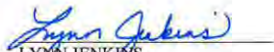
In short, McConnell's unparalleled facilities, strong community support, and unmatched record of success of the KC-135 mission make it an ideal home for the KC-46A training mission. Accordingly, we fully support the Air Force's favorable consideration of these factors and a final Record of Decision in favor of McConnell Air Force Base's candidacy early next year.

Sincerely,

  
PAT ROBERTS  
United States Senator

  
JERRY MORAN  
United States Senator


  
MIKE POMPEO  
United States Representative

  
LYNN JENKINS  
United States Representative

PRINTED ON RECYCLED PAPER

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

  
TIM HUELSKAMP  
United States Representative

M\_067\_D\_A  
  
KEVIN YODER  
United States Representative

CC:

Ms. Kathleen Ferguson -- Assistant Secretary (Acting), Assistant Secretary for installations, Environment and Logistics

LYNN JENKINS, CPA  
2nd District, Kansas  
VICE CHAIR  
HOUSE REPUBLICAN CONFERENCE  
ASSISTANT WHIP  
COMMITTEE ON WAYS AND MEANS  
SUBCOMMITTEE ON TRADE  
SUBCOMMITTEE ON DEVELOPMENT

Congress of the United States  
House of Representatives  
Washington, DC 20515-1602

November 7, 2013

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TOMPA, KS 66601  
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PITTSBURGH, KS 66762  
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M\_068\_D\_A

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support  
United States Department of the Air Force  
Building 171, Kelly Annex  
Lackland AFB, TX 78226

Dear Mr. Sciabica,

I am writing to express my continued support for US Air Force's (USAF) selection of McConnell Air Force Base (AFB) in Wichita, Kansas, as the Department's Preferred Alternative as the first Active Duty KC-46A Main Operating Base (MOB 1) for USAF. This decision will result in the stationing of 36 KC-46A tanker aircraft at McConnell beginning in 2016.

As the home of Air Mobility Command's 22d Air Refueling Wing (22 ARW), Air Force Reserve Command's 931st Air Refueling Group (931 ARG), and the Kansas Air National Guard's 184th Intelligence Wing (184 IW), McConnell Air Force base has a long and proud history of Total Force air refueling operations. McConnell has been critical to the evolution of tanker technology with their role in evolution of the KC-135R fielding of SOAR-RT, PACER CRAG, ROBE and MPRS systems. As such, they have tremendous experience to bring to the table as USAF fields the KC-46A.

Located on over 3,000 acres of land on a facility which has seen a clear effort to ensure that any development around the base would preserve McConnell's current and future mission capability, the installation was selected as the Preferred Alternative for MOB 1 KC-46A basing for a host of reasons, a few of which are listed below:

- McConnell's long track record of success with the KC-46's predecessor aircraft, the KC-135.
- Two 13,000 foot runways which are in excellent condition and a low milcon investment requirement for conversion from KC-135R to KC-46A operations.
- The transition will require the lowest possible manpower adjustments.
- The location of the base is central for the Regional Maintenance Training Center.
- McConnell is located in a region of high air refueling receiver demand.
- Strong community engagement and support.

USAF's Strategic Basing Process conducted a detailed analysis of candidate sites for the KC-46A MOB 1 and provided substantial evidence that McConnell AFB is the optimal to serve as the MOB 1 KC-46 location. The EIS will validate this decision and we anticipate a Record of Decision in 2014 which formalizes this decision.

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A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

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Again, I wish to convey my full support for this mission. The KC-46 will bring a tremendous power project capability to our Air Force in meeting its world-wide requirements while concurrently providing a tremendous sense of pride to McConnell AFB and the people of Kansas.

Sincerely,



Lynn Jenkins, CPA  
Member of Congress

CC:

Ms. Kathleen Ferguson -- Assistant Secretary (Acting), Assistant Secretary for Installations, Environment and Logistics,

TIM HUELSKAMP  
1ST DISTRICT, KANSAS

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twitter.com/CongHuelskamp  
youtube.com/CongressmanHuelskamp  
http://timhuelskamp.house.gov

Congress of the United States  
House of Representatives

Washington, DC 20515-1601

November 8, 2013

SMALL BUSINESS COMMITTEE  
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AND TECHNOLOGY

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AND WORKFORCE

VETERANS' AFFAIRS COMMITTEE  
SUBCOMMITTEE ON OVERSIGHT  
AND INVESTIGATIONS

SUBCOMMITTEE ON HEALTH

M\_069\_D\_A

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support,  
United States Department of the Air Force  
Building 171, Kelly Annex, Lackland AFB, TX 78226

Dear Mr. Joe Sciabica,

I am writing to express my support for the US Air Force's (USAF) selection of McConnell Air Force Base in Wichita, Kansas, as the Department's Preferred Alternative as the first Active Duty KC-46A Main Operating Base (MOB 1) for USAF.

As home to the Air Mobility Command's 22nd Air Refueling Wing (22 ARW), Air Force Reserve Command's 931st Air Refueling Group (931 ARG), and the Kansas Air National Guard's 184th Intelligence Wing (184 IW), McConnell carries a long history of Total Force air refueling operations. The base has also played a critical role in the progression of tanker technology with the evolution of the KC-135R.

Looking forward I believe McConnell also will play a vital role in the years ahead with the stationing of 36 KC-46A tanker aircraft at McConnell beginning in 2016. This stationing will complement current assets at the 3,000 acre facility for a variety of reasons. These include the following:

- Two 13,000 foot runways in excellent condition and a low milcon investment requirement for conversion from KC-135R to KC46A operations.
- Strong engagement, participation and support from the surrounding community.
- An ideal central location for the new KC-46A Regional Maintenance Training Center.
- Positioned in a region of high air refueling receiver demand.
- Of all installation candidates McConnell possesses the lowest manpower adjustments necessary for transition from KC-135 refueling aircraft to KC-46A.

McConnell Air Force Base is an optimal location to serve as the MOB 1 KC-46 location for the USAF. The Environmental Impact Study will validate this decision and we look forward to a Record of Decision to formalize this decision in 2014. This mission has my full support and I look forward to working with the USAF, McConnell Air Force Base, and local communities in Kansas to move forward to ensure the KC-46A mission at McConnell is a success.

Sincerely,



Tim Huelskamp  
Member of Congress

DOUGLASS CITY:  
100 MILITARY AVENUE, SUITE 205  
DOUGLASS CITY, KS 67801  
(820) 225-0172  
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A.7.3.10 McConnell AFB Draft EIS Comments (Continued)



M\_070\_D\_A

NOV 19 2013

J. Dale Clark  
Chief, Air Force NEPA Center  
2261 Hughes Avenue, Suite 155  
JBSA Lackland, TX 78236-9853

Dear Mr. Clark:

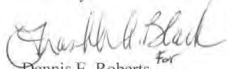
Thank you for your September 26 letter referencing the Draft Environmental Impact Statement for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown.

The Federal Aviation Administration (FAA) Airspace Services (AJV-1) has reviewed the KC-46A FTU and MOB 1 Draft Environmental Impact Statement and determined that the federal action described within the document does not involve changes in airspace or involve FAA action regarding airspace management. As such, AJV-1 has no comment.

AJV-1 has forwarded the link to the EIS website (<http://www.kc-46a-beddown.com/index.aspx>) which contains electronic copies of the document to the appropriate Air Traffic Organization Service Centers for their review. All comments will be provided electronically through the EIS website before the public comment period ends on December 9, 2012.

Thank you for providing this document to AJV-1 and we look forward to working with all of our Department of Defense partners in managing the National Airspace System.

Sincerely,

  
Dennis E. Roberts  
Director, Airspace Services  
Air Traffic Organization

M\_071\_D\_I

-----Original Message-----

From: Woody Thompson [REDACTED]  
Sent: Sunday, December 08, 2013 8:22 PM  
To: REYNOLDS, JEAN A CIV USAF HAF AFCEC/CZN  
Subject: comment on tanker location at McConnell AFB

I believe the air force missions that are critical have been beneficially embedded in our community for almost 75 years. Commencing with the beginning of the air capitol industry in the 20's and 30's our country has benefited as planes and air crews trained in Wichita and Kansas. The Stearman in now hanger 9 led to Boeings growth into the the B 29, the first jet bomber B 47 and then the B 52. Thousands of farm and small town folks flocked to Wichita to build the air capitol. Air traffic had developed through the historical Wichita Airport. In 1951 B 47s trundled across from Boeing. The Wichita Air Base started in hard back tents along Oliver Street by Boeing. 145 B 47s started training SAC crews. My father Lee Thompson a good Oklahoma Indian and fireman grew with the base from crew chief to Chief. He went on to help train and lead fireman at bases all over the world. At night in the early 50's I would sometimes awake to the sound of freedom carried on the south wind. As many as 15 B 47s were doing touch and go's. Young Lts attended my church at Immanuel Bapt. Participating in our young peoples groups. The congregation was composed of aircraft workers at Beech Cessna and Boeing. Our classes were often grades. Boeing cranked up to 32,000 workers for the B 52. The Air National Guard progressively became a key trainer of pilots, regular, reserve and guard.

Returning from nam I moved to east Wichita now for 42 years at 8302 E. Gilbert. F 100, F 105 F 4 soared overhead to train and bomb at Salina, home of the famous Smokey hill bases that trained all of the B 29 crews then B 47. Note it has one of the longest runways in the world. A good place for diversion for tanker crews. The B 1 bombers rumbled off on quick take offs. The sound of freedom made us feel proud. Then the KC 135 landing flight path for years passed over my house. Regular Air Force and Reserve too. I never fail to look up and follow those beautiful aircraft. We watch our birds and aircraft with joy each day and monitor their landing lights as they pattern touch and go's at night. Its like an adult can enjoy men and women flying with our daily migrations of geese and bird sat night and day. Its in our blood, its in our state motto reach for the stars. Its more than our environment. Its in our blood! Our habitat. Air capitol habitat.

It grows on you. I have transitioned from Marine rifle infantryman, Lawyer, to aircraft worker, to become our vo tech leading to an A&P FAA licensed Mechanic leading to work in production, medium air carrier, flight mechanic, plus politics, and then 9 years in the Civil Air Patrol as a ground team leader and Air observer. We meet at Hanger 9 a historical building on the west side of the base on the Guard side. It was the first Stearman plant. Then they became part of the Boeing company, moved to Oliver street and built 15,000 primary trainers in WWII for the army and navy.

I have 14 years in the Machinists' union working at the plants. I worked at Boeing as a lawyer in contracts. Now in semi retirement I work as a substitute teacher mostly pre k thru 5th in USD 259. 54,000 students. We have numerous magnet schools and a baccalaureate program at East High. Recently I subbed at Mueller elementary in an African American area. It is a new school with an emphasis in aviation. You see the displays and labs for nurturing our youngsters in aviation science.

Our Wichita State Univ is the best engineering school in the world. The vo tech I attended now ranks as a world class aviation education college and training center backed by all of the four aircraft companies. It lies north of McConnell at the business aviation Jabara Airport named after a Wichitian who was the first jet air ace in the world in the Korean War.

The south central Kansas area communities surrounding Wichita and McConnell have wonderful housing areas and schools that consistently score well on state educational tests.

As I think of the state topography I flew over as a CAP (official auxiliary of the USAF) Air Observer and the many good flying days, I realized how wise our WWII planners were in selecting Kansas for the famous B 29 bases and

A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

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aircraft manufacturing. We have more good flying days here than any other geographic area. Centrally located, the tankers can fly anywhere from here to assist our nation's fleet as well as our allies.

But more important, like that chevy truck commercial, this is the heartland of America. Honed by work ethic, aircraft aptitude, and the character of the small communities and the bread basket farms of Kansas, Oklahoma, Missouri and Nebraska, the great depression, the sand storms of the 30's, the war years, the cold war and the deployment years of McConnell supported by Wichita, this makes Wichita the best partner for the environment and habitat for the new tanker program. We are joined hip joint leg Kith and Kin and heart and soul with the future of the air leadership of the men and women and families of the USAF, the USAF Res, and the space satellite future in the intelligence mission of the Kansas Air National Guard of McConnell AFB.

We are again reporting for duty with USAF!



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

M\_072\_D\_A

DEC 6

OFFICE OF  
ENFORCEMENT AND  
COMPLIANCE ASSURANCE

Ms. Jean Reynolds  
USAF AFCEC/CZN  
2261 Hughes Avenue, Suite 155  
JBSA Lackland AFB, TX 78236-9853

Dear Ms. Reynolds:

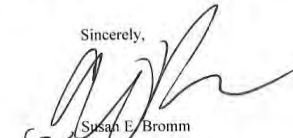
In accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act (NEPA), the Environmental Protection Agency (EPA) has reviewed the Department of the Air Force's draft Environmental Impact Statement (EIS) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown (CEQ No. 20130301).

The draft EIS addressed the potential environmental effects of establishing a KC-46A FTU to train crew and support personnel to operate the KC-46A aircraft and the MOB 1 to provide a combat operational KC-46A aerial refueling force. The KC-46A aerial refueling aircraft will replace a portion of the aging fleet of KC-135 Stratotankers. The U.S. Air Force identified Altus Air Force Base (AFB) as the preferred alternative for the FTU scenario and McConnell AFB as the preferred alternative for the MOB 1 scenario. Altus AFB includes the beddown of one FTU squadron by Air Education and Training Command with up to eight KC-46A aircraft. McConnell AFB would be the beddown of three squadrons by the Air Mobility Command with 36 KC-46A aircraft.

EPA believes that the draft EIS provides an adequate discussion of the potential environmental impacts and we have not identified any potential environmental impacts requiring substantive changes. EPA has rated the draft EIS as LO – "Lack of Objections." A summary of EPA's rating is enclosed.

We appreciate the opportunity to review the draft EIS. The staff contact for the review is Candi Schaedle and she can be reached at [REDACTED].

Sincerely,

  
Susan E. Bromm  
Director  
Office of Federal Activities

Enclosure

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A.7.3.10 McConnell AFB Draft EIS Comments (Continued)

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SUMMARY OF RATING DEFINITIONS AND FOLLOW UP ACTION\*

Environmental Impact of the Action

LO-Lack of Objections

The EPA review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC-Environmental Concerns

The EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce the environmental impacts. EPA would like to work with the lead agency to reduce these impacts.

EO-Environmental Objections

The EPA review has identified significant environmental impacts that must be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU-Environmentally Unsatisfactory

The EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS state, this proposal will be recommended for referral to the CEQ.

Adequacy of the Impact Statement

Category 1-Adequate

The EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis or data collecting is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2-Insufficient Information

The draft EIS does not contain sufficient information for the EPA to fully assess the environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses, or discussion should be included in the final EIS.

Category 3-Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the NEPA and/or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

\*From EPA Manual 1640 Policy and Procedures for the Review of the Federal Actions Impacting the Environment

Capitol Building  
Room 241-South  
300 SW 10th Street  
Topeka, KS 66612



M\_073\_D\_A

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Fax: (785) 368-8788  
governor.ks.gov

Sam Brownback, Governor

November 27, 2013

Mr. Joe Sciabica  
Director, Air Force Civil Engineer Center, A4/7  
Logistics, Installations and Mission Support  
United States Department of the Air Force  
Building 171, Kelly Annex  
Lackland AFB, TX 78226

Dear Mr. Sciabica,

We are extremely proud that McConnell Air Force Base (AFB) has been selected to become the first Active Duty Main Operating Base for the KC-46A mission. As proud as we are of that selection, we in Kansas are just as proud of McConnell's successful history of operating air refueling aircraft. Additionally and as a testament to the base's command leadership and its highly-skilled airmen and women, we take great pride in McConnell having earned more awards over the past 16 months than all other Air Mobility bases combined.

Clearly the Classical Association of the 22<sup>nd</sup> Air Refueling Wing and the Reserves' 931<sup>st</sup> Air Refueling Group was a factor in the selection. The state looks forward to helping grow this Association as the 931<sup>st</sup> increases in manpower.

I also want you to know that McConnell AFB enjoys, and will continue to enjoy, strong state and community support and engagement. I pledge on behalf of the citizens of Kansas that we will not only assist McConnell in its efficient accomplishment of its air refueling mission, but also in improving the quality of life of its airmen and women and their families.

Sincerely,

Governor

CC:

Ms. Kathleen Ferguson – Assistant Secretary (Acting), Assistant Secretary for Installations, Environment and Logistics

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

LOCATION: McConnell WELCOME TO THE PUBLIC HEARING. PLEASE SIGN IN! DATE: 11-12-13

Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hoot	Karl	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
CHASE	Tim	GWEDC			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Juell	Gail	Self Spouse-retired Army			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Zawitz	Mike	U.S. Senator Jerry Moran			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Vlams	Ted A.	Protein Beddown Co			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Jasgent	Charlotte	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
STEPHEN	RON	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

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Davidson	Linda	Jimie's Diner			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Guernsey	Debbie	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Fish	Dave	Self and Aerospace Business			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Pawloski	CHARLES	SELF			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Yoder	Ronald	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
MCCUNE	JOHN	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Ross	Ronald	Glade Eng			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

## A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

3

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




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INGRAM	IRA	SE-F			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
HADLEY	ROBERT	FRIENDS OF MCCON.			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BRIAN	MCDANIEL				<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
GUERNSEY	JOHN	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
White	Randy	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Voder	Jerry	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Witsman	Forest	WIBA			<input type="checkbox"/> I will download <input type="checkbox"/> CD
McCune	Barbara				<input type="checkbox"/> I will download <input type="checkbox"/> CD

4

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**



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SHAW	KEN	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
DUTTON	BILL	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
KLAMIS	Betty	Prime of Baller 5000 E. 29th St 61220			<input type="checkbox"/> I will download <input type="checkbox"/> CD
DeBoer	Jack	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
DeBoer	Marilyn	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Nelson	Rick	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
DAVIDSON	Jack	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

5

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**




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Pulley	Jack	Friends of McConnell			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Shaw	Dan	Ret.			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Roseboro	James	WIN			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MYSHKA	MICHAEL	USNFR			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Martz	Sandra	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Petr	Kathryn	"			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Petr	Donald	"			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Sargent	Bruce	McAFB RAO			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

6

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**



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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Lofland	Joanne	Hinkle Law LLC			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Scruggs	Bonnie	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Carlson	Megan	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Shaw	Richard	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
James W. James	James	WIN			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
PALOMINO	Debbie	HINKLE LAW FIRM			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Myshka	Mary				<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MOFFETT	Robert	CITIZEN			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

7

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Arnold, Jr	Don	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Spencer		Tom			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Bogert	Donelle	Wichita Chamber			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Munn	Sadd				<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Githens	Mike	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Foster	Thomas	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Chappell	Frank				<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

8

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Dennis	Sandra	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
McCoy	Howard	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
NORTON	Tim	Sdg. Co.			<input type="checkbox"/> I will download <input type="checkbox"/> CD
JOHNSON	JOE	SKF ARCHITECTURE			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BIRD	CODY	CITY OF DERBY			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Bridges	Carolyn	KS House of Representatives			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Plummer	Gary	Wichita Chamber			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Hantwell	Rick	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

9

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown



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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Prather	Angie	Chamber			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Wynne	William	Sage			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Skelton	Jim	Sedgwick County			<input type="checkbox"/> I will download <input type="checkbox"/> CD
EBY	MARTIN	EBY Construction			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
LE	DAVID	Lockwood			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Nestorow	Bill	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Fanzo	Jim	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
O'Donnell	Michael	State of Kansas			<input type="checkbox"/> I will download <input type="checkbox"/> CD

10

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown



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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Lieberman	Carol				<input type="checkbox"/> I will download <input type="checkbox"/> CD
Choyd	Bruce	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
COLE	GREGORY	Good Life Company LLC			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Kirby	Don	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Diamond	Lionel	Retired			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Soborn	KATH	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Robbins	DAVID	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BYRNE	TOM	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Gallagher	Pat	Wichita Metro Chamber			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Richard Rosamary	Wells				<input type="checkbox"/> I will download <input type="checkbox"/> CD
FREDERICK	RAY	WISA			<input type="checkbox"/> I will download <input type="checkbox"/> CD
SHIFFLET	DANA	SELF			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
McCue	Ellen	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
SCHWIEGER	JACK & MARY ELLEN	OURSELVES			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Jackson	Maria	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Cornwell	Forest	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Howell	Leah	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Sackett	Sam	Spirit AeroSys			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Imston	Wilford	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
LACKY	JEFF	TRANSSENS			<input type="checkbox"/> I will download <input type="checkbox"/> CD
GANN	Debbie	Wichita Chamber			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Erloway	Susan	Sedgwick Co.			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Williams	Samuel	SHS			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Carpenter	Rut	FAA			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

13

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Certain information, such as personal email and physical addresses, is covered by the Privacy Act of 1974, 5 USC Sec. 552a. PLEASE PRINT CLEARLY.

Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Sexton	Kathy	City of Derby			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
McLACHLAN	JAMES			<input type="checkbox"/> I will download <input type="checkbox"/> CD	
"	Jo			<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Roell	Virginia	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
MacDonald	Guy	Bel Air Corporation		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Rosell	Jon	Medical Society of Sedgwick County		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
White	Phil	KAKE-TV		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Huett	Jim	State Rep		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
BERTES	Thomas	SHS			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
WHITE	VICTOR	WICHITA AIRPORT AUTHORITY		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Measles	Tim	Be Amored Carpet Cleaning		<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD	
WRIGHT	Doug	IT-Tools		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Callaway	Jim	PowerTech, LLC		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Miller	Douglas	Wichita 312c		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Larsen	Christina	CYA Networks		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Duncan	MARVIN	Sedgwick County		<input type="checkbox"/> I will download <input type="checkbox"/> CD	

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

15

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Payne	Kyle	TCL			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Patrick	Max	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Rennett	Faye	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
LATKOVSKI	BRETT	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Sydney	AL	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
LESHEE	KEITH	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Bennett	Lisa	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Black	Shanna	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Sparks	Becky	CYANetworks			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Duncan	Jo	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Duncan	Herb	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Herman	Tom	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Alexander	Diana	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Schlegel	Monica	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
ROEBUCK	RANDY	William A. Roebuck			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

## A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

17

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Babich	Mike	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Hutchinson	Diana	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Hanna	Elaine	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Lesh	Gregg	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
MALICOT	BOB	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Standish	Vanessa	Standish Const			<input type="checkbox"/> I will download <input type="checkbox"/> CD
ROBERTS	JOHN	ROBERTS FAMILY DENTISTRY			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Buchanan	William	Schuyler County			<input type="checkbox"/> I will download <input type="checkbox"/> CD

18

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Kelipilulu	Joel	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Ganung	Conner	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
LOWRY	VIRGIL	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
GRIER	MIKE	EBY CONST CO			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
WOLF	RONALD	SELF COOK AIRFIELD			<input type="checkbox"/> I will download <input type="checkbox"/> CD
VANSICKLE	JEFFREY	SLMV Architecture			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Richent	DOREEN JEAN	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MOORE	TRIP	Shayors			<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown



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Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Patrick	Kirk	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
KINGSLAND	KEVIN	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Peterjohn	Karl	Sebastian County Commissioner			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hanna	Lloyd	Medical Law Clerk			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
CALVERT	ROBERT	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
ALDERSON	CHUCK	STATE AG			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BOOKWALT	Tom	Hasoca Corp			<input type="checkbox"/> I will download <input type="checkbox"/> CD
MCCABE	JOHN	FRIENDS OF DOC SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

20

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

## KC-46A Beddown



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Last Name	First Name	Organization You Represent, if Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Arice	Claine				<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Ingle	Elena	DAB III			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
RENNOLET	FRANK				<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Lacey	STEVE	TEAS SYSTEMS			<input type="checkbox"/> I will download <input type="checkbox"/> CD
McClain	Cathy	Spirit 1			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Jacobs	Sharon	Citizen			<input type="checkbox"/> I will download <input type="checkbox"/> CD
STANDRICH RICHARD	RICHARD	FRIENDS OF MCCABE			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
McCabe	Nelson	FRIENDS OF DOC			<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Flowers	Linda	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Stecher	David	self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Payne	Donald	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Jones	Wade	Self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Roberts	Jeannie	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Roberts	Richard	self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Weniger	Patty	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
WRIGHT	Lenny			<input type="checkbox"/> I will download <input type="checkbox"/> CD	

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Quinn	Denise	self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Stafford	Chad	Occidental mag		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Van Horn	Larry	GLMV Architecture		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
	DLE			<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Frost-Gordon				<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Frost-Gordon	OLETA	Senator		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Eckles	Jim	military retire		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Eckles	Margie	civilian		<input type="checkbox"/> I will download <input type="checkbox"/> CD	

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

23

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Bartlett	James	Spirit Aero Systems			<input type="checkbox"/> I will download <input type="checkbox"/> CD
GUNTHER	MAURICE	Retired Boe			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Sherman	Don	Western Energy			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Birdwell	Chris	Pioneer Ballroom			<input type="checkbox"/> I will download <input type="checkbox"/> CD
HALL	NEAL	SELF			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
		SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BROADHEAD	JAMES	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Myers	Julie	self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Babich	Dan	WIN			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Cornwell	Tammy	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Porter	Toni	Congressman			<input type="checkbox"/> I will download <input type="checkbox"/> CD
MYERS	JIM	self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Fox	VAUGHN				<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
THEISEN	RICHARD	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
COCHRANE	CINDIE	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Roberts	Wayne	FRIENDS of McConnell			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Roemeling	David	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Johnson	Shelley	myself			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Nelson	Gary	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Morrissey	Kevin	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
WRIGHT	Carol	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Cochrane	Stephen	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Weddle	Bon	wma			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Roberts	Norma	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Hall	Karen	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Broadhead	Brenda	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
GRIER	Jim	Edy course			<input type="checkbox"/> I will download <input type="checkbox"/> CD
FREY	SAM	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
KUPP	TESESA	CHILD START			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Clarke	Lou	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Roemeling	Pamela	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Nelson	Kay	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD

## A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

# KC-46A Beddown



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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
KAMHIKULO	Kael	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Ganoung	Douglas	Self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
Lewry	Janet	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Ferraro	Claudio	Via Christi		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
McLeod	Jay	Self		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Pendergast	Keith	Self		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
WASSER	DEAN	SELF		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
SANDERSON	JERRY	SELF		<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)

# KC-46A Beddown



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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
SKOLTON	LOON	USAF AT McCONNEL			<input type="checkbox"/> I will download <input type="checkbox"/> CD
BEU	Wayne	SBA		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
DYE	DENNIS	12T		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
PACHANKIS	JOHANNIE	Self (KPA)		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
NORRIS	LARRY			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD	
MERRIMAN	VIRGINIA	SELF		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Monroy	Gy	Occidental		<input type="checkbox"/> I will download <input type="checkbox"/> CD	
Shaw	Gene	Retired		<input type="checkbox"/> I will download <input type="checkbox"/> CD	

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Fields-Haynes	Alice	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Kilgus	Barb	SELF			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Donham	PAUL	SELF + FAMILY			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Berry	WALTER	Berry Companies			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Robertson	April	Wichita Chamber of Commerce			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Elliott	Angie	Wichita Chamber			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Lee	Kenneth	City of Bel Air and Ruggles & Bohm			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MERRIMAN	LEO	L.H. MERRIMAN INC			<input type="checkbox"/> I will download <input type="checkbox"/> CD

30

Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Parsons	Nick	Self			<input type="checkbox"/> I will download <input checked="" type="checkbox"/> CD
Flynn	Daniel	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Shaw	James	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
Shaw	Margorie	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.11 McConnell AFB Public Hearing Sign-In Sheets (Continued)

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
Boman	Benny	Self			<input type="checkbox"/> I will download <input type="checkbox"/> CD
SHAW	JAMES				<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

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Formal Training Unit (FTU) & First Main Operating Base (MOB 1)  
**KC-46A Beddown**

U.S. AIR FORCE

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Last Name	First Name	Organization You Represent, If Applicable	Complete Mailing Address	Email Address	Would you like a copy of the Final EIS?
Smith	Joe	Self	1234 Anderson Avenue, Suite 123 Anywhere, USA 12345-1234	joesmith@abc.com	<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
MASCHINO	BRIAN				<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
NEWTON	MAGGIE	Self			<input checked="" type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD
					<input type="checkbox"/> I will download <input type="checkbox"/> CD

A.7.3.12 McConnell AFB Public Hearing Transcript

**In The Matter Of:**  
*KC-46A Tanker Public Hearing v*

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*KC-46A Tanker Public Hearing*  
*November 12, 2013*

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**CRS** *Court Reporting Service, Inc*  
River Park Place - 727 N. Waco, Suite 360  
Wichita, KS 67203 (316) 267-1201  
www.crsreporting.com

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Min-U-Script® with Word Index

**KC-46A Tanker Public Hearing - November 12, 2013**

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PUBLIC HEARING FOR THE  
ENVIRONMENTAL IMPACT STATEMENT FOR THE  
FORMAL TRAINING UNIT (FTU) AND  
MAIN OPERATING BASE 1 (MOB 1)  
FOR THE BEDDOWN OF  
KC-46A TANKER AIRCRAFT

NOVEMBER 12, 2013  
WSU HUGHES METROPOLITAN COMPLEX  
5015 E. 29TH STREET NORTH  
ROOM 180  
WICHITA, KANSAS  
5:35 P.M.

**Court Reporting Service, Inc. (316) 267-1201**

A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

KC-46A Tanker Public Hearing - November 12, 2013

2

1 LT. COL. RICHARDSON: Good evening,  
2 everyone. Can you please take your seats  
3 and if you have a cell phone or other  
4 electronic device, please silence it at  
5 this time. Time permitting after the  
6 formal hearing, Air Force representatives  
7 will remain to further discuss the  
8 proposals.

9 The time is just after  
10 5:30 p.m. and we will now start the  
11 hearing. Thank you for attending the  
12 Public Hearing for the Draft  
13 Environmental Impact Statement, or Draft  
14 EIS, for the proposed Formal Training  
15 Unit and First Main Operating Base  
16 Beddown of the KC-46A Tanker Aircraft.  
17 I'm Lieutenant Colonel Natalie Richardson  
18 and I'll be your hearing officer tonight.  
19 I am an Air Force judge and will be  
20 acting as the moderator tonight. As the  
21 moderator, my role is to ensure that the  
22 Air Force provides a fair, orderly and  
23 impartial hearing where you have an  
24 opportunity to make comments on the  
25 proposal. I do not work for anyone at

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KC-46A Tanker Public Hearing - November 12, 2013

3

1 Air Mobility Command, the Air Force Civil  
2 Engineer Center, Air Education and  
3 Training Command or any of the Air Force  
4 bases under consideration for the  
5 proposed action. I am not involved in  
6 any way with the development of the Draft  
7 EIS and I do not as a legal advisor to  
8 the Air Force representatives working on  
9 this proposal.

10 This hearing is held in  
11 accordance with the provisions of the  
12 National Environmental Policy Act, NEPA,  
13 as implemented by the Council on  
14 Environmental Quality Regulations and the  
15 Air Force. We are here tonight to  
16 present information on the environmental  
17 impacts of the proposed KC-46A beddown  
18 and to take your comments on the Draft  
19 EIS.

20 Tonight's hearing is one of  
21 several opportunities for public  
22 comments. This hearing is an opportunity  
23 for you to express your views and  
24 concerns about the adequacy of the  
25 environmental analysis contained in the

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

**KC-46A Tanker Public Hearing - November 12, 2013**

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1 Draft EIS, as well as any issues related  
2 to the National Environmental Policy Act  
3 process. This hearing is not a debate or  
4 a vote on the Draft EIS and it is not a  
5 question and answer session. We welcome  
6 your input on the environmental analysis  
7 presented in the Draft EIS. Comments  
8 about other unrelated issues can  
9 certainly be made, but they will not  
10 assist in the decision making process for  
11 the Draft EIS.

12 I would like to begin this  
13 hearing by introducing the NEPA team.  
14 Beginning with the team leader, Colonel  
15 Todd Cargle, with the Air Mobility  
16 Command who will present details of the  
17 proposed action and alternatives. Next  
18 is Mr. Dale Clark, Manager of the Air  
19 Force NEPA Center, who will discuss  
20 results of the NEPA process. Also,  
21 representatives from Leidos are here  
22 supporting the Air Force as the  
23 contractor. Transcribing tonight's  
24 hearing is Janelle Lindeman from Court  
25 Reporting Service.

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**KC-46A Tanker Public Hearing - November 12, 2013**

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1 Colonel Cargle will first  
2 present information on the proposed  
3 action and the alternatives. Then  
4 Mr. Clark will provide an overview of the  
5 NEPA process and will summarize the  
6 potential environmental consequences of  
7 the proposal. After their presentations  
8 which should take about 20 minutes, we  
9 will have a break, and then after the  
10 break we will begin our oral comment  
11 period during which you can provide input  
12 on the proposed action, Draft EIS  
13 analysis and potential environmental  
14 impacts. Your comments will become part  
15 of the official record of the final EIS.  
16 Please note that informal discussions at  
17 our informational displays will not  
18 become part of the EIS record, so if you  
19 have items of concern about the analysis  
20 in the Draft EIS you would like to bring  
21 to our attention, please do so during the  
22 formal comment opportunity or in writing.

23 If you do not choose to make  
24 an oral comment, you can submit written  
25 comments either by turning in a comment

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

KC-46A Tanker Public Hearing - November 12, 2013

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1 form this evening or by mailing it to the  
 2 address shown on the screen. Comments  
 3 may also be submitted online at  
 4 www.kc-46a.beddown.com.

5 If you have not had a chance  
 6 to review the Draft EIS, it is available  
 7 on the website or at one of the public  
 8 libraries listed here.

9 The Air Force welcomes public  
 10 comments in writing at any time during  
 11 the environmental impact analysis  
 12 process. To receive timely consideration  
 13 for the final EIS, please submit your  
 14 comments by December 9, 2013. Your  
 15 comments will provide the decision-maker,  
 16 the Secretary of the Air Force, with  
 17 information to assist in making a  
 18 decision regarding where the Formal  
 19 Training Unit, or FTU, and First Main  
 20 Operating Base, or MOB 1, will be  
 21 located. Your comments during this  
 22 produce provide the benefit of your  
 23 knowledge of the local area and your  
 24 concerns about the environmental impact  
 25 or analysis.

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KC-46A Tanker Public Hearing - November 12, 2013

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1 We'll now move into the  
 2 briefings. During the briefings, our  
 3 speakers will be reading from prepared  
 4 scripts. The briefings are written to  
 5 make certain each speaker covers all  
 6 pertinent information and that it is  
 7 consistent for all four hearings. With  
 8 that, I'll turn the mic over to Colonel  
 9 Cargle.

10 COL. CARGLE: Good evening and  
 11 welcome. I'm Colonel Todd Cargle. I  
 12 currently serve as the Chief in the  
 13 Programs Division within the Plans,  
 14 Requirements and Programs Director at  
 15 Headquarters, Air Mobility Command, Scott  
 16 Air Force Base, Illinois. I'm a command  
 17 pilot with 4,000 hours experience in  
 18 mobility aircraft, including being an  
 19 instructor and an evaluator in the  
 20 KC-135. I have operated and led mobility  
 21 forces in all facets of the mission to  
 22 include five combined deployments to  
 23 Afghanistan and Iraq. With that being  
 24 said, welcome to this evening's meeting.

25 As the team lead, I encourage

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

KC-46A Tanker Public Hearing - November 12, 2013

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1 you to assist the Air Force in meeting  
2 its requirements to comply with the NEPA  
3 process. Your attendance tonight  
4 indicates your interest in this proposed  
5 action and I hope your comments will  
6 provide us with improvements or areas  
7 where further analysis is needed. All  
8 comments will be properly reviewed,  
9 analyzed, and addressed in the Final EIS.

10 The purpose of the proposed  
11 action involves the KC-46A's role in the  
12 Air Force tanker fleet modernization  
13 effort. The goal of this effort is  
14 ensure future tankers are the best  
15 available to support a high-threat,  
16 multi-role war fighting capability to  
17 commanders worldwide. To perform this  
18 mission, trained aircrews, maintenance  
19 and support personnel must be available  
20 to meet KC-46A inventory delivery dates  
21 as older tanker aircraft are removed from  
22 the inventory.

23 While we continue to operate  
24 the Legacy tanker fleet, the KC-46A  
25 provides several advantages including:

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KC-46A Tanker Public Hearing - November 12, 2013

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1 The ability to refuel any certified  
2 fixed-wing aircraft on any mission.  
3 Capable of refueling multiple aircraft at  
4 once. Increased airlift capability.  
5 Receiver air refueling, and improved  
6 force protection and survivability.

7 The Air Force is proposing to  
8 establish an FTU and the First MOB for  
9 KC-46A aircraft along with required  
10 infrastructure and manpower at two active  
11 duty Air Force bases in the Continental  
12 United States.

13 The FTU will train personnel  
14 to safely and effectively fly and operate  
15 KC-46A aircraft. The operational MOB 1  
16 mission utilizes pilots, co-pilots, boom  
17 operators and other support staff who  
18 operate and maintain the aircraft to  
19 provide worldwide refueling, cargo or  
20 aeromedical evacuation support.

21 The action alternative  
22 consists of two parts. The first part is  
23 the KC-46A FTU beddown, which places up  
24 to eight KC-46A tanker aircraft at one  
25 squadron at one base.

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

KC-46A Tanker Public Hearing - November 12, 2013

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1 The second part of the action  
2 is the selection of the first KC-46A MOB.  
3 This action places 36 KC-46A aircraft in  
4 three squadrons at one base.

5 The no-action alternative is  
6 required by NEPA and was evaluated at  
7 each proposed beddown location to provide  
8 a baseline for decision-makers. The  
9 no-action alternative evaluates the  
10 environmental consequences of not basing  
11 the KC-46A aircraft at any base.

12 In the Draft EIS, the Air  
13 Force analyzed the environmental  
14 consequences of basing the FTU at Altus  
15 Air Force Base in Oklahoma or McConnell  
16 Air Force Base in Kansas. The Air Force  
17 also analyzed the environmental  
18 consequences of basing MOB 1 at Altus Air  
19 Force Base in Oklahoma, Fairchild Air  
20 Force Base in Washington, Grand Forks Air  
21 Force Base in North Dakota or at  
22 McConnell Air Force Base in Kansas.

23 In this action, no base would  
24 be selected to host both the KC-46A FTU  
25 and MOB 1 missions.

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KC-46A Tanker Public Hearing - November 12, 2013

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1 In May of this year, the  
2 Secretary of the Air Force announced  
3 Altus Air Force Base as the preferred  
4 alternative for the KC-46A FTU.  
5 McConnell Air Force Base was selected as  
6 the preferred alternative for the First  
7 KC-46A Main Operating Base. Fairchild  
8 and Grand Forks were announced as  
9 reasonable alternatives for MOB 1. This  
10 table summarizes the bases being  
11 considered for each KC-46A mission and  
12 how the existing missions could be  
13 impacted. The following slides summarize  
14 the aircraft facilities and manpower  
15 changes anticipated to be required to  
16 support the KC-46A mission.

17 If Altus is selected for the  
18 KC-46A FTU or the MOB 1 mission, the  
19 existing KC-135 and C-17 missions would  
20 remain and continue to operate.

21 Implementation of the FTU  
22 mission would require a variety of  
23 on-base development projects including  
24 demolition, new construction and  
25 renovation. The FTU mission would

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

KC-46A Tanker Public Hearing - November 12, 2013

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1 increase the area population by  
2 approximately 578 people including  
3 estimated dependents and would result in  
4 a 38 percent increase in annual aircraft  
5 operations.  
6           At each base, KC-46A aircrews  
7 would utilize the existing KC-135 flight  
8 tracks, air refueling tracks and fuel  
9 jettison areas, if necessary.  
10           KC-46A aircrews associated  
11 with the FTU would use the same four  
12 auxiliary airfields that are currently  
13 being used by KC-135 aircrews. These  
14 include Clinton-Sherman Industrial  
15 Airpark, Lubbock Preston Smith  
16 International Airport, Ft. Worth Alliance  
17 Airport, and Rick Husband Amarillo  
18 International Airport.  
19           Implementation of the MOB 1  
20 mission would result in more new  
21 construction, demolition and renovation  
22 than the FTU mission and would increase  
23 the population by approximately 4,917  
24 people including estimated dependents.  
25 Annual aircraft operations would also

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KC-46A Tanker Public Hearing - November 12, 2013

13

1 increase by approximately 31 percent.  
2 KC-46A aircrews associated with MOB 1 at  
3 all bases would not use auxiliary  
4 airfields.  
5           Fairchild Air Force Base has  
6 been identified as an alternate for the  
7 MOB 1 mission. If Fairchild is selected  
8 to host the MOB 1 mission, the existing  
9 30 KC-135 aircraft would be replaced with  
10 36 KC-46A aircraft.  
11           Implementation of the MOB 1  
12 mission would require a variety of  
13 on-base development projects including  
14 demolition, new construction and  
15 renovation. This mission would increase  
16 the area population by approximately  
17 1,095 people including estimated  
18 dependents and would result in 62 percent  
19 increase in annual aircraft operations.  
20           Grand Forks Air Force Base  
21 has been identified as alternative for  
22 the MOB 1 mission. If Grand Forks is  
23 selected to host the MOB 1 mission, the  
24 existing remotely piloted aircraft  
25 missions would continue and the KC-46A

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

KC-46A Tanker Public Hearing - November 12, 2013

14

1 mission would constitute an additive  
 2 mission.  
 3           Implementation of the MOB 1  
 4 mission would require a variety of  
 5 on-base development projects including  
 6 demolition, new construction and  
 7 renovation. This mission would increase  
 8 the area population by approximately  
 9 4,528 people including estimated  
 10 dependents and would result in  
 11 226 percent increase in annual aircraft  
 12 operations.  
 13           If McConnell is selected to  
 14 host the MOB 1 mission, the existing  
 15 44 KC-135 aircraft would be replaced by  
 16 36 KC-46A aircraft. Implementation of  
 17 MOB 1 mission would require a variety of  
 18 on-base development projects including  
 19 demolition, new construction and  
 20 renovation. This mission would decrease  
 21 the area population by approximately  
 22 291 people including estimated dependents  
 23 and would result in a 24 percent increase  
 24 in annual aircraft operations.  
 25           For the purposes of this

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KC-46A Tanker Public Hearing - November 12, 2013

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1 Draft EIS, McConnell Air Force Base was  
 2 evaluated for the potential environmental  
 3 impacts associated with implementation of  
 4 the FTU mission. This evaluation was  
 5 conducted under the assumption that the  
 6 existing KC-135 mission would remain in  
 7 place.  
 8           Implementation of the FTU  
 9 mission would result in less new  
 10 construction and demolition and  
 11 renovation than the MOB 1 mission and  
 12 would increase the population by  
 13 approximately 570 people including  
 14 estimated dependents. Annual aircraft  
 15 operations would also increase by  
 16 approximately 107 percent.  
 17           KC-46A aircrews associated  
 18 with the FTU would also use three  
 19 auxiliary airfields that are currently  
 20 being used by KC-135 aircrews. These  
 21 airfields include Clinton-Sherman  
 22 Industrial Airpark, Forbes Field and  
 23 Wichita Mid-Continent Airport.  
 24           We would like to emphasize  
 25 that although preferred alternatives for

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

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1 the FTU and MOB 1 have been announced, no  
2 decision has been made on basing either  
3 of the two KC-46A missions currently  
4 under analysis in the Draft EIS. We look  
5 forward to inputs provided from the  
6 public and affected communities as we  
7 proceed through the environmental impact  
8 analysis. Once the requirements of the  
9 environmental impact analysis process are  
10 complete, the Air Force will make its  
11 final basing decision.

12 Thank you for your attention.  
13 I will now turn the presentation over to  
14 Mr. Dale Clark from the Air Force NEPA  
15 Center to discuss the NEPA process and  
16 provide greater detail on potential  
17 impacts as described in the Draft EIS.

18 COL. CLARK: Thank you, Colonel  
19 Cargle.

20 Good evening. My name is  
21 Dale Clark. I am the Chief of the Air  
22 Force NEPA Center at Lackland Air Force  
23 Base in San Antonio, Texas. The NEPA  
24 Center is responsible for the analysis of  
25 the proposed action and alternatives in

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1 this document. I'm here tonight to  
2 discuss the results of the environmental  
3 impact analysis for the proposal  
4 presented by Colonel Cargle.

5 The Draft EIS has been  
6 prepared in accordance with the  
7 requirements of NEPA, which requires  
8 federal agencies to analyze the potential  
9 environmental consequences of a proposed  
10 action, reasonable alternatives,  
11 including the no-action before any action  
12 is taken. The goal of conducting an EIS  
13 is to support sound decisions through the  
14 assessment of potential environmental  
15 consequences as well as involvement of  
16 the public in the process. The results  
17 of this analysis and other relevant  
18 factors will be considered before a  
19 decision is made by the Air Force on this  
20 proposal. Your input previously during  
21 the public scoping period and now during  
22 this public comment period will help the  
23 Secretary of the Air Force make the most  
24 informed decision possible on this  
25 proposal.

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

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1 As you can see on this slide,  
2 there are several key steps to the  
3 environmental impact analysis process.  
4 We are currently at the public and agency  
5 Draft EIS review stage. This period  
6 began with the Federal Register  
7 publication of the notice of availability  
8 for the Draft EIS. At that time, copies  
9 of the Draft EIS were mailed to local  
10 libraries, state and federal  
11 representatives and individuals who  
12 requested copies during the EIS scoping  
13 period.

14 The normal review period  
15 required by NEPA is 45 days. Our date  
16 for completion of the public comment  
17 period is December 9, 2013. The public  
18 hearings this week are being held in the  
19 same communities as the previous scoping  
20 meetings in order to provide the affected  
21 communities with the opportunity to  
22 comment on the Draft EIS.

23 After the public comment  
24 period closes, we will review all  
25 comments received at the public hearings,

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1 through the mail, or electronically on  
2 our website and use them to prepare the  
3 final EIS. Substantive comments will be  
4 reviewed and responded to in the final.

5 The Final EIS is scheduled to  
6 be released in March, 2014. After the  
7 Final EIS notice of availability is  
8 published in the Federal Register, the  
9 Air Force must observe a waiting period  
10 of at least 30 days before signing the  
11 final record of decision to document  
12 which alternative or alternatives the Air  
13 Force selects for implementation.

14 The Draft EIS presents  
15 information on potential environmental  
16 consequences associated with implementing  
17 the FTU and MOB 1 missions at each of the  
18 four bases. The potential environmental  
19 consequences are grouped into the five  
20 categories shown on this slide and the  
21 subcategories represent the 11 resource  
22 areas evaluated at each location.

23 The next set of slides  
24 describes the potential environmental  
25 consequences at each of the four bases.

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

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1 For the purposes of this presentation,  
2 the potential environmental consequences  
3 at each base have been summarized in  
4 broad terms. For a much more detailed  
5 evaluation of the potential consequences,  
6 please refer to Chapter 4 of the Draft  
7 EIS.

8 Implementation of the FTU  
9 mission at Altus would expose an  
10 additional 584 acres of off-base land and  
11 an estimated 17 off-base residents to  
12 noise levels of 65 decibels or greater.  
13 As is shown on the noise contour map,  
14 much of this land is located directly to  
15 the north and south of the runways.  
16 Noise resulting from the use of the four  
17 auxiliary airfields is not anticipated to  
18 be noticeable. Other than the noise  
19 increases, no other resource areas are  
20 anticipated to be significantly impacted  
21 by the FTU mission at Altus.

22 Implementation of the FTU  
23 mission would add up to 578 full-time  
24 military dependents and students to  
25 Jackson County resulting in a 2.2 percent

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1 increase in the county population.

2 A variety of demolition,  
3 construction and renovation projects  
4 would be required for the FTU mission  
5 resulting in positive economic impacts to  
6 Jackson County and surrounding areas.

7 Implementation of the MOB 1  
8 mission at Altus would expose an  
9 additional 155 acres of off-base land and  
10 an estimated six additional off-base  
11 residents to noise levels of 65 decibels  
12 or greater. Because three squadrons are  
13 required for the MOB 1 mission,  
14 substantially more construction,  
15 demolition and renovation would be  
16 required. Most notable is the  
17 construction of the new ramp and apron  
18 area for parking 15 additional aircraft.  
19 Implementation of the MOB 1 mission would  
20 add up to 4,917 full-time military and  
21 dependents to Jackson County resulting in  
22 an 18.6 percent increase in the county  
23 population. An increase of this  
24 magnitude could result in traffic  
25 congestion near the base and place

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 additional strain on base infrastructure.  
2 No other resource areas are anticipated  
3 to be significantly impacted by the MOB 1  
4 mission at Altus.

5 Implementation of the MOB 1  
6 mission at Fairchild Air Force Base would  
7 expose an additional 53 acres of off-base  
8 land and an estimated two off-base  
9 residents to noise levels of 65 decibels  
10 or greater.

11 Implementation of the MOB 1  
12 mission would add up to 1,095 full-time  
13 military and dependents to Spokane County  
14 resulting in a 0.2 percent increase in  
15 the county population.

16 One historic building,  
17 Hangar 2050, could be adversely affected  
18 by the implementation of the MOB 1  
19 mission. Consultation with the  
20 Washington State Historic Preservation  
21 Officer has been initiated and would be  
22 completed if Fairchild Air Force Base is  
23 selected to host the MOB 1 mission.

24 No other major consequences  
25 are anticipated for the MOB 1 mission at

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1 Fairchild.

2 Implementation of the MOB 1  
3 mission at Grand Forks Air Force Base  
4 would expose an additional 62 acres of  
5 off-base land. No off-base residents  
6 would be exposed to noise levels of 65  
7 decibels or greater.

8 The KC-46A parking plan was  
9 specifically designed to minimize  
10 conflicts with the existing RPA missions  
11 at Grand Forks. In addition, the FAA  
12 requires that air traffic control  
13 deconfliction of remotely piloted  
14 aircraft and manned aircraft operating in  
15 Class D airspace around Grand Forks Air  
16 Force Base.

17 Approximately 2 acres of  
18 potential wetlands could be impacted by  
19 the proposed action. Should Grand Forks  
20 Air Force Base be selected to host the  
21 MOB 1 mission, the Air Force would work  
22 with the U.S. Army Corps of Engineers and  
23 the North Dakota State Water Commission  
24 to determine if the wetlands are subject  
25 to regulation and determine appropriate

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 permit and potential mitigation  
2 requirements.

3 Implementation of the MOB 1  
4 mission would add up to 4,526 full-time  
5 military and dependents to Grand Forks  
6 County resulting in a 6.8 percent  
7 increase in the county population.

8 No other major consequences  
9 are anticipated for the MOB 1 mission at  
10 Grand Forks Air Force Base.

11 Implementation of the MOB 1  
12 mission at McConnell Air Force Base would  
13 decrease the number of acres by 386 and  
14 the number of people by 199 exposed to  
15 noise levels of 65 decibels or greater.  
16 Reduction in noise levels can be  
17 primarily attributed to replacement of  
18 the 44 KC-135 aircraft with only 36  
19 slightly quieter KC-46A aircraft at the  
20 installation.

21 A substantial amount of  
22 construction, demolition and renovation  
23 would be required to implement the MOB 1  
24 mission and the demolition of Hangar 1106  
25 would result in an adverse effect to this

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1 history facility. The Air Force is  
2 preparing a Memorandum of Agreement with  
3 the Kansas State Historic Preservation  
4 Officer to mitigate these effects. In  
5 addition, a portion of the McConnell  
6 creek floodplain would be impacted with  
7 the addition to Building 1220. To  
8 minimize potential impacts, construction  
9 designs would incorporate measures for  
10 construction in the floodplain at this  
11 facility.

12 Implementation of the MOB 1  
13 mission would result in a decrease of 291  
14 full-time military and dependents in  
15 Sedgwick County, or a 0.1 percent  
16 decrease in county population. This  
17 decrease is not anticipated to negatively  
18 affect Sedgwick County.

19 No other resource areas are  
20 anticipated to be significantly impacted  
21 by the MOB 1 mission.

22 Implementation of the FTU  
23 mission at McConnell Air Force Base would  
24 increase the number of acres by 273 and  
25 the number of people by 594 exposed to

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 noise levels of 65 decibels or greater.  
2 The increase in noise levels is primarily  
3 attributed to the addition of up to eight  
4 KC-46A aircraft for the FTU mission in  
5 addition to the existing KC-135 mission.  
6 The additional acres affected by noise  
7 are primarily located directly to the  
8 north and south of the two runways.

9 A lesser amount of  
10 construction, demolition and renovation  
11 would be required to implement the FTU  
12 mission and no historic structures would  
13 be affected.

14 Implementation of the FTU  
15 mission would result in an increase of  
16 570 full-time military, dependents and  
17 students to Sedgwick County resulting in  
18 a 0.2 percent increase in county  
19 population.

20 No other resource areas are  
21 anticipated to be significantly impacted  
22 by the FTU mission.

23 This concludes my portion of  
24 the presentation and I thank you for your  
25 attention.

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1 I will turn the floor back to  
2 Lieutenant Colonel Richardson who will  
3 provide you information on the second  
4 part of tonight's hearing, the public  
5 comment period. Thank you.

6 LT. COL. RICHARDSON: Before we  
7 move to the public comment part of the  
8 hearing, we are going to take a 15-minute  
9 break. For those wishing to speak, this  
10 is the format. Please fill out a white  
11 speaker form and turn that in. If you  
12 have not already done so, please see Beth  
13 at the entrance, she's waving back there,  
14 at the entrance to the room and fill out  
15 that card. When we come back from the  
16 break, we will start the public comment  
17 period.

18 (A brief recess was taken.)

19 LT. COL. RICHARDSON: Ladies and  
20 gentlemen, we are back from our break.  
21 We are now going to go into the public  
22 comment part of the hearing, and I'm  
23 going to stay over here because the  
24 speakers will come over to that podium.

25 How this is going to work is

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 I will call you by name and you may  
2 approach the microphone. To help our  
3 stenographer who is in front of the  
4 microphone, please begin by stating your  
5 name and the name of the organization, if  
6 any, that you represent. It would also  
7 help if you could spell your last name.  
8 Please do not provide any other personal  
9 information such as home address or phone  
10 number. Again, your comments are  
11 recorded verbatim. They will be used to  
12 develop a transcript and permanent record  
13 of this meeting and will be published in  
14 the Final EIS. Your name will be  
15 included along with your comments.  
16 Personal home addresses and phone numbers  
17 will not be published in the Final EIS.  
18 Each speaker will have three minutes to  
19 provide his or her oral comments on the  
20 proposed action and alternatives. We  
21 have a timekeeper to help keep track of  
22 time. That's Brian there in the front  
23 seat and he's got a couple cards here.  
24 He's going to hold up a yellow card when  
25 you have about 30 seconds left, and then

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1 a red card when time is up. At that  
2 time, please conclude your comments so I  
3 can call the next person. There is no  
4 obligation for you to use your full three  
5 minutes, nor do you need to yield any  
6 remaining time to someone else. I'll  
7 just move on to the next speaker once you  
8 have finished your comments. If you have  
9 any sort of other presentation to  
10 provide, I ask that you submit that in  
11 the form of a written comment. The  
12 public comment portion is set to end at  
13 7:30. If everyone who signed up to speak  
14 has had a chance to do so before that  
15 time, I will ask any speaker who would  
16 like another three minutes to expand on  
17 their comments. If you want to do that,  
18 let me know and we'll put another three  
19 minutes on the clock for you. If you  
20 want to add something later to your oral  
21 comments or you would rather not speak  
22 here tonight, you can submit written  
23 comments. There's no page limit on  
24 written comments and the Air Force gives  
25 equal weight to oral and written

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 comments. Both become part of the  
2 official record and are included in the  
3 Final EIS.  
4 Just a few reminders before  
5 we get started. Please limit your  
6 comments to the analysis in the Draft  
7 EIS. That's the purpose of the public  
8 comment period. As I mentioned earlier,  
9 this is not a Q and A session, rather, it  
10 is an opportunity for you to put on the  
11 record your views and concerns about the  
12 proposal that you want the  
13 decision-makers to consider. Questions  
14 that you pose during your verbal  
15 testimony will become part of the record  
16 and will be considered.  
17 After we've completed the  
18 formal part of this hearing, Air Force  
19 representatives will continue to be  
20 available for discussion. I have been  
21 provided a list of individuals who would  
22 like to speak. We will first invite  
23 elected officials to speak followed by  
24 others as we have received their speaker  
25 cards.

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1 Our first speaker from the  
2 office of Senator Roberts is Mr. Ryan  
3 Flickner. As you approach, I'm just  
4 going to remind you to state and spell  
5 your name and indicate your affiliation,  
6 if any, for the record.  
7 MR. FLICKNER: Thank you. My name  
8 is Ryan Flickner and I serve as Deputy  
9 State Director for Senator Pat Roberts.  
10 On behalf of Senator Pat Roberts, I  
11 welcome all of you to the City of Wichita  
12 and McConnell Air Force Base and thank  
13 you for participating in this extremely  
14 important hearing. The turnout and local  
15 advocacy throughout this process are  
16 major factors for why the Air Force  
17 believes McConnell is the best base for  
18 our new tankers. I know many of you are  
19 life-long residents of the Wichita area.  
20 For our visitors, this is likely not the  
21 first time you have been to Wichita, the  
22 Air Capital of the World. McConnell Air  
23 Force Base is an economic staple in  
24 Wichita and has long been an important  
25 part of the fabric of Kansas. Thank you

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 to each and every one of you for coming  
2 out in support of McConnell. Thank you  
3 for being an advocate in this exciting  
4 decision for Main Operating Base Number  
5 1. Senator Roberts is confident that as  
6 you evaluate the operational and training  
7 requirements along with the potential  
8 impacts to existing missions, housing,  
9 infrastructure and manpower, you will  
10 find out that there is absolutely no  
11 better place for the first KC-46A tanker  
12 beddown than McConnell. McConnell is the  
13 home of Air Mobility Command's 22nd Air  
14 Refueling Wing, the Air Force Reserve  
15 Command's 931st Air Refueling Group, what  
16 we hope will be named a wing soon, as  
17 well as the Kansas Air National Guard's  
18 184th Intelligence Wing. The integrated  
19 presence of our active duty reserves and  
20 guard make McConnell a model of  
21 excellence. Currently, McConnell flies,  
22 maintains and supports 44 KC-135s, or  
23 what we often refer to as Eisenhower era  
24 tankers. Senator Roberts fought hard for  
25 these aging aircraft to be replaced and I

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1 am so pleased that the KC-46A will come  
2 online by 2016 and now Senator Roberts is  
3 again fighting to make sure these new  
4 tankers call Wichita home. McConnell is  
5 the best choice for Main Operating Base  
6 Number 1 for several reasons. By  
7 replacing the current fleet of 44 KC-135  
8 aircraft with 36 Next Gen Tankers at  
9 McConnell, the Air Force encounters the  
10 lowest manpower adjustment among  
11 candidate installations. For over two  
12 decades, McConnell has been home to the  
13 Air Force's KC-135 largest regional  
14 maintenance training center. In this  
15 role, McConnell has provided critical  
16 mission support and development through  
17 flight testing and validation. McConnell  
18 has support units on its base that flies  
19 tankers. McConnell results in the lowest  
20 military construction costs. McConnell  
21 is located in a region of high air  
22 refueling receiver demand. And let it  
23 not go unnoticed, McConnell has received  
24 more awards over the past 16 months than  
25 all other air mobility bases combined.

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 As the Environmental Impact Study hearing  
2 moves ahead, Senator Roberts looks  
3 forward to working with the Air Force,  
4 McConnell and our local community to  
5 ensure the success of the KC-46 mission.  
6 The Air Force's strategic basing process  
7 provided substantial evidence that  
8 McConnell is the best location to serve  
9 as MOB 1. I am extremely confident that  
10 the Environmental Impact Statement will  
11 validate this decision. At McConnell,  
12 you will find mission success, mission  
13 expertise, and most important, a strong  
14 local engagement, participation and  
15 support network. Thank you for your time  
16 tonight. Senator Roberts looks forward  
17 to helping announce McConnell Air Force  
18 Base as the Air Force's Main Operating  
19 Base Number 1 Record of Decision in 2014.  
20 LT. COL. RICHARDSON: The next  
21 speaker from Senator Moran's office is  
22 Mike Zamrzla.  
23 MR. ZAMRZLA: Good evening. I'm  
24 Mike Zamrzla, Deputy State Director for  
25 United States Senator Jerry Moran.

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1 Lieutenant Colonel  
2 Richardson, Colonel Cargle, Mr. Clark,  
3 thank you for organizing this evening's  
4 hearing. It's a pleasure and an honor to  
5 have the opportunity to submit the  
6 following comments into the official  
7 record on behalf of Senator Moran.  
8 I couldn't be more proud that  
9 in May of this year McConnell Air Force  
10 Base was selected as the preferred  
11 alternative for the Main Operating Base  
12 for KC-46A tankers. This selection  
13 codifies what Kansans already know: We  
14 are and will continue to be the Air  
15 Capital of the World. We will continue  
16 to lead the way in aviation and air  
17 mobility support for the United States  
18 military at home and abroad. The  
19 selection process rewarded what we have  
20 at McConnell stretching beyond the  
21 capabilities of the base and our airmen.  
22 The efforts of the Friends of McConnell,  
23 the Wichita Chamber of Commerce, the  
24 Governors Military Council, the City of  
25 Wichita, the City of Derby and Sedgwick

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 County are also credited for this  
2 selection. I'm encouraged that the  
3 Environmental Impact Study is well  
4 underway collecting data and relevant  
5 information to shine a light on all  
6 McConnell has to offer, including the  
7 great work that has already begun to plan  
8 for the transition from the KC-135s to  
9 the KC-46As. I trust the analysis from  
10 this study will confirm that McConnell is  
11 best suited for this mission from an  
12 operational and environmental perspective  
13 affirming McConnell's excellent scoring  
14 that occurred during the basing selection  
15 process. I believe the Record of  
16 Decision will validate that McConnell is  
17 and will continue to be the super tanker  
18 base for the nation as the home of the  
19 KC-46A.

20 In addition to the honorable  
21 recognition and responsibility that comes  
22 with providing the Air Force Strategic  
23 Air Mobility, we know this will translate  
24 into an economic boost for the community  
25 as support for various phases gets

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1 underway to house and fly the new KC-46A  
2 tankers. Thanks to all the airmen and  
3 their families at McConnell for your hard  
4 work, dedication and exemplary  
5 performance which substantiate just how  
6 valuable and meaningful Team McConnell is  
7 to the air mobility mission. Thanks also  
8 to the Air Force and Air Mobility Command  
9 for conducting a thoughtful, objective  
10 and criteria-based selection process and  
11 Environmental Impact Study that will no  
12 doubt yield another round of positive  
13 results.

14 Finally, I'm sure that many  
15 fellow Kansans have turned out tonight to  
16 inform the Air Force's decision. I also  
17 encourage all citizens to submit their  
18 views in writing to make the most of this  
19 important process. I look forward to the  
20 results of this study that will  
21 undoubtedly prove that because of  
22 McConnell's air refueling demand, reduced  
23 environmental impacts and overwhelming  
24 capacity, it is not only the preferred  
25 alternative for the Air Force, but the

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 best choice as the nation's super tanker  
2 base. Very truly yours, United States  
3 Senator Jerry Moran.

4 LT. COL. RICHARDSON: Thank you.  
5 Our next speaker from Congressman  
6 Pompeo's office is Toni Porter.

7 MS. PORTER: Good evening. Thank  
8 you for having me here tonight. Toni  
9 Porter. I serve as Congressman Mike  
10 Pompeo's District Director.

11 I wanted to take this  
12 opportunity to offer Congressman Pompeo's  
13 continued support of the Air Force's  
14 selection of McConnell Air Force Base as  
15 the preferred alternative for the Air  
16 Force's very active duty station for the  
17 new KC-46A tanker. You see, McConnell is  
18 more than an Air Force base. It's a  
19 family. McConnell has a long and proud  
20 history of air refueling operations and  
21 brings an incredible amount of experience  
22 to bear in these operations. Each of  
23 these operations is about making sure  
24 that our men and women can stay in the  
25 fight and keep America safe. Each of

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1 these operations is about ensuring that  
2 we are ready to take on a mission no  
3 matter how long it takes. McConnell's  
4 mission is about taking care of our own.  
5 McConnell won an intense competition to  
6 be the Air Force's preferred alternative  
7 for the KC-46 tanker and that should be  
8 no surprise. Consider McConnell's two  
9 13,000-foot runways which are ready to  
10 receive the KC-46A, or the fact that  
11 McConnell has the lowest military  
12 construction need to provide for the  
13 conversion from the KC-135 to the KC-46A.  
14 And it's obvious that the Air Force would  
15 benefit from McConnell's location in the  
16 heart of the country, an area of high air  
17 refueling demand which is perfectly  
18 situated to host the new KC-46A Regional  
19 Maintenance Training Center as well as  
20 provide continued support to the special  
21 operations community through its special  
22 operations air refueling training  
23 mission. But what makes it really  
24 obvious that McConnell is the right fit  
25 is because of the way it's integrated

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 into all of our lives. Much as McConnell  
2 keeps the engines running for our Armed  
3 Forces all around the world, the men and  
4 women of McConnell keep the engines  
5 running for our community in Southcentral  
6 Kansas. Beyond the location, facilities  
7 and operational excellence that McConnell  
8 displays, community is something that  
9 sets McConnell even further apart from  
10 the rest of the field. Those of us in  
11 Southcentral Kansas often refer to  
12 McConnell as our military base. The Air  
13 Force personnel and the surrounding  
14 community have forged a very special  
15 relationship. Take, for instance,  
16 Friends of McConnell, a group of  
17 business, civic and government leaders  
18 who advocate for the installation and  
19 raise money for McConnell families in  
20 need and generally supports a strong and  
21 deep bond between the base and  
22 surrounding communities. The support  
23 goes both ways. Base personnel have gone  
24 out of their way to give the local  
25 community -- they sponsor the McConnell

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1 Air Show, as an example, and Open House  
2 which gives the community an opportunity  
3 to see the base and what makes it a  
4 world-class installation. They also  
5 donate their time and energy generously  
6 to civic organizations such as Big  
7 Brothers, Big Sisters, Lions Club and The  
8 Boy Scouts of America.

9 Although it's well known  
10 around here how great McConnell is, it's  
11 nice to be recognized outside of the  
12 community as well and McConnell has  
13 received more awards over the past  
14 16 months than all other Air Mobility  
15 bases combined. The EIS and the formal  
16 Record of Decision will confirm what  
17 those of us who make this community our  
18 home already know. McConnell is home for  
19 so many of us, it should also be home to  
20 the KC-46A. Thank you.

21 LT. COL. RICHARDSON: Thank you.  
22 The next speaker I'd like to welcome is  
23 Senator Faust-Goudeau.

24 MS. FAUST-GOUDÉAU: Good evening.  
25 For the record, I am Senator Oletha

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 Faust-Goudeau representing the 29th  
2 District of the Kansas Senate. I am here  
3 this evening on behalf of the 29th  
4 District to speak in support of the  
5 KC-46A to be located at McConnell Air  
6 Force Base. I am also here on behalf of  
7 the members of the Southcentral  
8 Legislative Delegation to support the  
9 proposed action of the KC-46A to be  
10 located at McConnell Air Force Base. I  
11 am personally here tonight as Oletha  
12 Faust-Goudeau to support this project  
13 here in the City of Wichita as we are the  
14 Air Capital City of the World, I remind  
15 you. Also, I have had the pleasure of  
16 flying on a KC-135 fuel tanker plane as  
17 I, too, helped raise funds to support a  
18 monument at the actual site of the KC-135  
19 plane crash here in Wichita in 1965, and  
20 during that time and speaking with many  
21 who helped on that project, those fuel  
22 tanker planes are somewhat outdated, and  
23 so I truly support this project to  
24 upgrade those aircrafts because it is so  
25 important on those missions that those

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1 planes have capable aircrafts to refuel.  
2 We here in Wichita here at  
3 Wichita State University, NCAT and other  
4 surrounding areas, the projects, we are  
5 training so many of our young people to  
6 go into aviation, and this would be the  
7 perfect fit and the perfect project for  
8 all the airmen and women in our city, our  
9 wonderful Air Capital City of the World.  
10 I also want to say on behalf  
11 of the Southcentral Legislative  
12 Delegation and Senator Mike Peterson who  
13 represents McConnell in the Kansas  
14 Senate, he wanted to be here tonight but  
15 was unable to.  
16 But again, I just close with  
17 saying this is a worthy project. It  
18 would also bring approximately  
19 \$640 million to our state's economy, so I  
20 urge you to certainly consider this  
21 project being located in the City of  
22 Wichita at McConnell Air Force Base.  
23 Again, thank you for your time. I'm  
24 done.  
25 LT. COL. RICHARDSON: Thank you.

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 The next speaker I would like to welcome  
2 to the podium is State Representative Jim  
3 Howell.

4 MR. HOWELL: Good evening. My name  
5 is State Representative Jim Howell  
6 representing the 81st Legislative  
7 District here in Kansas which includes  
8 McConnell Air Force Base. Thank you for  
9 coming out tonight. It is a great honor  
10 and privilege to be able to speak on  
11 behalf of KC-46A coming to Wichita,  
12 Kansas to McConnell Air Force Base. I'm  
13 also a candidate for Sedgwick County  
14 Commission District 5 which includes  
15 McConnell Air Force Base as well. I am  
16 also Vice Chairman of the Southcentral  
17 Legislative Delegation that Senator  
18 Faust-Goudeau just spoke about. I am  
19 also an Air Force veteran and work on  
20 tankers in my civilian job. I have lived  
21 in Derby for the last 22 years, 15 years  
22 on the very northern edge of Derby just a  
23 couple miles south of the end of the  
24 runway. I want you to know something  
25 I've learned as a State Representative, I

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1 have received thousands of e-mails on a  
2 wide variety of topics from any comments  
3 about concerns that people in my district  
4 care very much about, but not one time I  
5 have ever received a complaint or comment  
6 negative about McConnell Air Force Base  
7 or the planes flying overhead. I have  
8 knocked on thousands of doors and had  
9 many discussions with people at the doors  
10 about a number of topics. Not one time  
11 has anybody in my four years of  
12 campaigning ever brought up any topic  
13 negative to McConnell Air Force Base or  
14 the airplanes flying overhead. In fact,  
15 the opposite is true. I would tell you  
16 we are addicted to airplanes in Wichita.  
17 We love the KC-46, we love the KC-135.  
18 We love the airmen that work on those  
19 airplanes in McConnell Air Force Base.  
20 We are used to the planes flying overhead  
21 and it is not something we object to but  
22 rather welcome the planes because they  
23 represent the sound of freedom.

24 I would tell you there's a  
25 recent happening up at the Naval Air

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A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

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1 Station at Whidbey Island. Whidbey  
2 Island is being sued right now by a group  
3 of citizens that says that they must use  
4 headphones to block out the noise. I  
5 know the KC-46 is a quieter airplane than  
6 the KC-135. We kind of miss the days of  
7 the B-1s and the F-16s and even F4s. The  
8 noise is not a problem and even as  
9 presented tonight, the noise would  
10 actually be less with the KC-46,  
11 obviously a positive choice for our area.  
12 We like the airplanes and that would be a  
13 positive for us as well.

14 I want you to know that in my  
15 three years of serving in the  
16 Legislature, I have seen many pieces of  
17 legislation that have come before the  
18 military committees and the Legislature  
19 for consideration. These bills are the  
20 most universally supported measures  
21 receiving bipartisan approval. The state  
22 has a reputation that demonstrates  
23 military favor and wide-ranging support.  
24 We also recognize the great relationship  
25 we have with the Base. We know that

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1 Kansas has enjoyed more prosperity  
2 because of McConnell's presence. Today  
3 we are excited and anxious for the Next  
4 Generation's state-of-the-art new  
5 workhorse, the KC-46. It will be home  
6 here with people that love what that  
7 plane represents. We know that this is  
8 good for our community and is good for  
9 Kansas and the United States as well. We  
10 believe we are right for the needs of the  
11 Air Force, too. McConnell makes the most  
12 sense, I believe. Thank you for giving  
13 me the opportunity to encourage you to  
14 bring the KC-46 to us. We are ready.

15 LT. COL. RICHARDSON: Thank you.  
16 The next speaker I welcome to the podium  
17 is Sedgwick County Commissioner Jim  
18 Skelton.

19 MR. SKELTON: Good evening. My  
20 name is Jim Skelton and I'm Chairman of  
21 Sedgwick County government. This Jim  
22 right here is my opponent. There's one  
23 thing we both agree on that the KC-46  
24 Alpha needs to come to McConnell Air  
25 Force Base, so on behalf of the Board of

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 Sedgwick County Commissioners, thank you  
2 for this opportunity to speak in support  
3 of McConnell Air Force Base. I am  
4 confident that you will hear from a  
5 number of supportive individuals and  
6 groups this evening who want to assure  
7 you McConnell Air Force Base is in a very  
8 strong position to be the Main Operating  
9 Base for the Tanker Replacement Program.  
10 McConnell Air Force Base has always been  
11 a valuable neighbor and partner to  
12 Sedgwick County. We have watched with  
13 pride over many years as the airmen and  
14 women at the Base have adapted to changes  
15 in mission and aircraft. We are  
16 extremely proud to have the Super Tanker  
17 Base and the military personnel and their  
18 families here in Wichita, Kansas. We  
19 know that having McConnell Air Force Base  
20 provides a significant economic boost to  
21 our community and we are proud and we are  
22 able to provide things in our community  
23 for the military personnel and their  
24 families to make their stay here great.  
25 Sedgwick County supports quality of life

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1 programs like the Sedgwick County Zoo,  
2 Exploration Place, the Intrust Bank  
3 Arena. All help provide cultural and  
4 entertainment options. We encourage  
5 outdoor play through our great parks like  
6 Sedgwick County Park and Lake Afton  
7 Parks. We here in Wichita, Kansas have  
8 numerous connecting bicycle paths for  
9 bicycle enthusiasts. We partner with the  
10 higher education community also through  
11 partnerships with Wichita State, with the  
12 Wichita Area Technical College to provide  
13 adult learning opportunities. In 2010,  
14 the county built a National Center for  
15 Aviation Training, also known as NCAT, a  
16 state-of-the-art training center to  
17 support aviation, research and training  
18 for the aviation industry. We know that  
19 these are critically important factors  
20 for you and your personnel while they are  
21 stationed here and also a part of what  
22 encourages them to retire here as well.  
23 We are so pleased to have a long-lasting  
24 partnership with McConnell Air Force Base  
25 and we are proud of their role in

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 expanding our nation's defense. We  
 2 understand and appreciate how important  
 3 it is that we work together as partners,  
 4 neighbors and friends. And ladies and  
 5 gentlemen, there's one other thing I  
 6 would like to say. I live about two  
 7 miles from the base as the crow flies.  
 8 I've been an elected official for nine  
 9 years and I have had not one complaint  
 10 regarding McConnell, only compliments.  
 11 Thank you very much.  
 12 LT. COL. RICHARDSON: Thank you.  
 13 The next speaker to take the podium,  
 14 Sedgwick County Commissioner Karl  
 15 Peterjohn.  
 16 MR. PETERJOHN: Good evening. Karl  
 17 Peterjohn. I represent the 3rd County  
 18 Commission District in Sedgwick County.  
 19 I wanted to come up here and make a grand  
 20 expression of points, but unfortunately,  
 21 my six preceding speakers have beat me to  
 22 the punch. I'm going to second their  
 23 comments and thank you very much.  
 24 LT. COL. RICHARDSON: For our next  
 25 round of speakers, I'm going to announce

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1 the speaker as well as who is going to  
 2 come next so that you can get yourself  
 3 mentally ready that you're going to be  
 4 the speaker after.  
 5 Next, Derby City Manager,  
 6 Kathy Sexton, who will be followed by  
 7 Debbie Gann.  
 8 MS. SEXTON: Good evening. Kathy  
 9 Sexton, City Manager of Derby. Thank you  
 10 very much for this thorough report. I  
 11 have read your report. The environmental  
 12 information is helpful to our neighbor --  
 13 the City of Derby being the closest  
 14 neighbor to McConnell, we appreciate the  
 15 numbers and the information about the  
 16 noise and the people affected and that  
 17 kind of thing. We are mentioned as the  
 18 city in the report in terms of land use  
 19 and preventing encroachment. We are  
 20 encouraged by the report and certainly  
 21 will continue to do that cooperation that  
 22 the report recommends, that we continue  
 23 to work to control the development in the  
 24 area and to not have encroachment. It  
 25 might help to know that for many years

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 Derby has worked cooperatively with not  
2 only the folks at McConnell but also the  
3 civil engineering folks at the Pentagon  
4 to make sure that our local rules not  
5 only meet the Pentagon requirements but  
6 exceed them and we are one of the few  
7 communities in the country that do exceed  
8 them, as I understand it, and we have  
9 been a leader in that respect. We're  
10 proud of that. But I think the other  
11 thing I'm most proud of is that since  
12 those rules were adopted and approved by  
13 the Pentagon in 2008, that's been like  
14 five years, right, during that time I  
15 have been City Manager that whole time  
16 and I can say that I have not seen any  
17 time when the community of Derby has  
18 violated the rules that it agreed to  
19 follow. Our planning commission of  
20 volunteers, our City Council of  
21 volunteers has always followed through in  
22 supporting the rules that they passed.  
23 And that is not always easy. There are  
24 times when property owners say I want to  
25 build houses on this site, I want to

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1 build a business on this site and that is  
2 difficult, but we have been on record  
3 both staff and our elected and appointed  
4 officials as saying no sometimes when we  
5 feel like that would encroach upon the  
6 Base. And so just to sum up, we are very  
7 supportive and, of course, our actions of  
8 recent years have also been supported by  
9 Major General Timothy Byers and this  
10 calendar year in his written comments  
11 about Derby's cooperation indicating, I  
12 quote: Derby has diligently pursued  
13 compatible development within APZ 1 and  
14 2. Thank you very much.  
15 LT. COL. RICHARDSON: The next  
16 speaker I'd like to welcome is Debbie  
17 Gann from Wichita Metro Chamber. After  
18 her will be Cathy McClain.  
19 MS. GANN: Hi, I'm Debbie Gann and  
20 I am the 2013 Chair of the Wichita Metro  
21 Chamber of Commerce. Thank you for the  
22 opportunity to express the Chamber's  
23 support for securing the KC-46A tanker  
24 program at McConnell Air Force Base. I  
25 recently read that mobility aircraft

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 departs somewhere around the world every  
2 two and a half minutes and they do this  
3 24 hours a day, 365 days a year. Very  
4 impressive. As a representative of the  
5 business community, I can assure you that  
6 business owners throughout the area are  
7 extremely grateful for the wide role  
8 McConnell plays in ensuring our safety  
9 and our freedom. Our thanks to each of  
10 you and to all of those in the Air  
11 Mobility Command who make this possible  
12 through your dedication to your mission.  
13 The airmen at McConnell have a proven  
14 track record of keeping our country and  
15 our community secure which in turn allows  
16 the Chamber business members to focus on  
17 what we do best, creating jobs in  
18 Southcentral Kansas. We also recognize  
19 the economic impact that McConnell has on  
20 Southcentral Kansas. We're very pleased  
21 at the prospect of increased employment  
22 at the base as a result of the new tanker  
23 mission. These airmen and their families  
24 are valuable residents of our community.  
25 They participate in community programs,

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1 become members of area museums and  
2 attractions, they volunteer their  
3 services to local non-profits and they  
4 purchase goods and services from our  
5 businesses. Their children bring their  
6 intellect to our schools, their creative  
7 talent to our art programs and their  
8 athletic gifts to our sports fields.  
9 Their spouses provide an experienced  
10 workforce to our businesses and increase  
11 our community's volunteer pool. And the  
12 retirees from McConnell who decide to  
13 stay in this area continue to contribute  
14 to the wellbeing and quality of life that  
15 make Wichita such a terrific place to  
16 live. McConnell families are an  
17 essential element of our aviation-focused  
18 community. As the home of world-class  
19 aircraft manufacturers, aviation  
20 suppliers and a well-trained aviation  
21 workforce, McConnell Air Force Base is a  
22 vital partner in making Wichita, Kansas  
23 the Air Capital of the World. This  
24 award-winning base is well-prepared for  
25 additional responsibilities and the

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 Wichita Metro Chamber is pleased to  
2 support this new mission. McConnell has  
3 always demonstrated tremendous  
4 cooperation with local businesses and  
5 government entities and we consider them  
6 a very compatible and extremely valuable  
7 neighbor. We strongly encourage and  
8 support the finalization of your decision  
9 to place the KC-46A at McConnell Air  
10 Force Base. Thank you.

11 LT. COL. RICHARDSON: Thank you.  
12 Our next speaker is Cathy McClain to be  
13 followed by Kurt Carpenter.

14 MS. MCCLAIN: Good evening. I'm  
15 Cathy McClain from Spirit AeroSystems.  
16 At Spirit, I'm charged with leading and  
17 directing four aircraft programs, but I'm  
18 here tonight not only as a representative  
19 of Spirit AeroSystems but as a retired  
20 Air Force officer, a former wing  
21 commander at McConnell Air Force Base and  
22 an Air Force veteran who decided to come  
23 home and call Wichita my new home and  
24 raise my family here. Why is McConnell  
25 Air Force Base the perfect location for

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1 these new KC-46As? It's because of its  
2 central location. Our tankers from  
3 McConnell can respond rapidly to a threat  
4 across the Pacific or a threat in the  
5 Middle East. McConnell tankers give  
6 conflict response flexibility.  
7 Additionally, the tankers at McConnell  
8 Air Force Base being so closely located  
9 to Air Mobility Command's Mobility  
10 Training hub, Altus Air Force Base,  
11 230 miles as the crow flies, allows those  
12 two Air Force bases to achieve fuel  
13 efficiencies. Within minutes of takeoff,  
14 the planes from Altus Air Force Base and  
15 McConnell Air Force Base can be flying in  
16 formation and that is a benefit and a  
17 cost savings to all of us as taxpayers.  
18 So bottom line, McConnell Air Force Base  
19 is quite simply the best location for our  
20 response flexibility and the fact that we  
21 can support the intensive training  
22 requirements as this new KC-46A is made  
23 part of our new fleet. For most of my  
24 career, I've been associated with tankers  
25 in one aspect or another. When I worked

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 at Boeing, I led a team of software  
2 engineers that are writing the code for  
3 the new KC-46 boom to actually fly it,  
4 and although Boeing is moving to  
5 Oklahoma, those software engineers are  
6 still here in Wichita writing that code.  
7 And at Spirit AeroSystems, hundreds of  
8 Spirit's employees are building the  
9 forward fuselage, cockpit, if you will,  
10 for the KC-46A as well as the fan cowls,  
11 the fan ducts and the forward leading  
12 edge of that aircraft. When we rolled  
13 out the first forward fuselage at Spirit  
14 AeroSystems, our customer, Boeing, and  
15 the Air Force came here to celebrate with  
16 hundreds of Spirit employees. Our Spirit  
17 employees are very proud of what they do  
18 because they know what they are building  
19 right across the ramp from you at  
20 McConnell has direct impact on what you  
21 do. I'm very proud to know that just  
22 outside my office they're working on a  
23 high-quality product on time and I am  
24 very excited that outside my window one  
25 day, I will watch a KC-46A that started

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1 here in Wichita return to Wichita. As a  
2 former Air Force pilot who deployed and  
3 have refueled over 4,000 aircraft over  
4 Iraq, I want to say I'm very excited for  
5 the men and women at McConnell Air Force  
6 Base who will fly our new tanker as they  
7 defend our freedom both here and abroad.  
8 Thank you.

9 LT. COL. RICHARDSON: Thank you.  
10 The next speaker I'd like to welcome to  
11 the podium is Kurt Carpenter, to be  
12 followed by Susan Erlenwein.

13 MR. CARPENTER: Good evening. Kurt  
14 Carpenter and I'm the Air Traffic Manager  
15 at Wichita Air Traffic Control Tower and  
16 TRACON, and on behalf of the FAA, we'd  
17 like to express our strong support for  
18 the McConnell Air Force Base with respect  
19 to its selection for Main Operating Base  
20 of the KC-46A tanker aircraft.

21 At our facility, we don't  
22 only separate and control the aircraft in  
23 and out of Mid-Continent, we have a  
24 30-mile radius roughly up to 15,000 that  
25 we support and that, of course, includes

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 McConnell and other airports around the  
2 area such as Beech, Jabara, Hutchinson,  
3 many others, but we believe that this  
4 base should be here. There's obviously  
5 some economic benefits and other things  
6 that have been talked about tonight and  
7 will be talked about later, but the one  
8 thing I wanted to bring up tonight is the  
9 safety aspect. We have a big history of  
10 working the aircraft in and out of this  
11 area both for military and commercial.  
12 The FAA tower and radar approach control  
13 folks are highly trained and highly  
14 experienced in heavy jet activity as well  
15 as other military operations. And just  
16 to give you an idea of how much we do the  
17 work there and how much we -- the  
18 activity at Wichita just at  
19 Mid-Continent, the air traffic control  
20 tower handles 22,000 military operations  
21 per year averaging about 1800 per month,  
22 and of those almost 22,000, the local  
23 operations which we translate to either  
24 touch-and-go or training operations. And  
25 then the TRACON which again is the radar

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1 facility handles over 32,000 military  
2 operations. That's averaging over 2600  
3 per month, and out of those over 30,000  
4 were itinerant, meaning they either land  
5 at McConnell, Hutch or Mid-Continent. So  
6 as you see, that great amount of  
7 activity, adding a few more is not going  
8 to make any difference for us. In fact,  
9 our numbers have been down the last four  
10 to five years, so we welcome that  
11 opportunity to increase those numbers and  
12 keep our folks busy, keep them up to  
13 speed. To emphasize safety again a  
14 little more, we do have letters of  
15 agreement and procedures in place with  
16 McConnell Air Force Base to accommodate  
17 their traffic to seamlessly merge and  
18 blend that traffic into the overhead  
19 traffic that we currently have from the  
20 other airports. Also, we do provide a  
21 24-hour service. We're open 24 hours a  
22 day, and again, that's radar guidance in  
23 and out of McConnell and the area. And  
24 we do one other thing about the airspace  
25 here. It is pretty wide open. There are

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 MOAs, military operations areas, on  
2 virtually all sides of us within about a  
3 40-mile area, and so we already have that  
4 military activity, we can accommodate  
5 that and, bottom line, right now we're  
6 ready to help the safety and service  
7 those tankers as soon as they get going  
8 here. We greatly appreciate the  
9 opportunity to comment on the project and  
10 we look forward to a positive outcome for  
11 McConnell Air Force Base. Thank you.

12 LT. COL. RICHARDSON: Thank you.  
13 The next speaker I'd like to welcome to  
14 the podium is Susan Erlenwein, to be  
15 followed by John Schlegel.

16 MS. ERLLENWEIN: Thank you. My name  
17 is Susan Erlenwein. I'm the Director of  
18 Sedgwick County Environmental Resources  
19 and Household Hazardous Waste Facility.  
20 I'd like to thank Mr. Clark for his  
21 previous review of the NEPA and EIS.  
22 Many people don't realize how  
23 comprehensive the environmental impact  
24 statement is. It goes into great detail  
25 on the current soil conditions, water,

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1 surface groundwater, wetlands. It's very  
2 important to look at the air quality, the  
3 noise levels and socioeconomic justice,  
4 all sorts of things that compile into an  
5 EIS statement, and I think they did an  
6 excellent job in doing this report. It's  
7 very comprehensive and extensive. I've  
8 read many EIS reports and this one did  
9 not put me to sleep, so I appreciate  
10 that. It's very good. And if any of you  
11 have actually looked at it, it's well  
12 over 500 pages long and did an excellent  
13 job in looking at this. What's very  
14 important is that the EIS statement  
15 compares the current conditions, what's  
16 existing now and what will exist with  
17 changes, whether those are the  
18 construction changes that will go on or  
19 whether it has to deal with the air  
20 emissions from the aircraft or the noise  
21 levels of the aircraft. I'm very pleased  
22 that this came out very positive for our  
23 community. They looked at our current  
24 air quality conditions, noise levels,  
25 growth patterns and it came out very

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 excellent. I'd like to thank you for  
2 your thorough report and I'm very  
3 supportive of this project. Thank you  
4 very much.

5 LT. COL. RICHARDSON: Thank you.  
6 Our next speaker is John Schlegel to be  
7 followed by Claudio Ferraro.

8 MR. SCHLEGEL: Good evening. My  
9 name is John Schlegel. I'm the Director  
10 of Planning for Sedgwick County and for  
11 the City of Wichita, and my comments  
12 tonight are about land use around  
13 McConnell Air Force Base. In 2005,  
14 Sedgwick County and the cities of Wichita  
15 and Derby participated in the development  
16 of a Joint Land Use Study, also called a  
17 JLUS, for McConnell Air Force Base. The  
18 purpose of the study was to analyze the  
19 impacts of urban development around  
20 McConnell for the Base's current mission  
21 and other possible future missions. The  
22 JLUS in 2005 was prompted by the  
23 completion an Air Installation Compatible  
24 Use Zone Study, also called an AICUZ, for  
25 McConnell that was completed in 2004.

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1 The updated AICUZ study showed that the  
2 noise exposure area around McConnell had  
3 shrunk considerably from that of the  
4 previous B-1 Bomber mission, and many  
5 Wichitans will remember the B-1 Bomber  
6 mission being stationed at McConnell.  
7 The 2005 JLUS assessed future development  
8 potential around the base and existing  
9 and future land use conflicts. It listed  
10 recommendations for changes in local  
11 government land use regulation and in  
12 local real estate practices that could  
13 help minimize conflicts between land use  
14 around the base and base operations.  
15 Sedgwick County, Wichita and Derby have  
16 made significant progress in implementing  
17 these recommendations, and here are a  
18 few. First of all, for decades, Sedgwick  
19 County/Wichita have jointly administered  
20 airport overlay districts in the clear  
21 zones and accident potential zones at  
22 each end of the McConnell runways. These  
23 overlay districts have helped keep the  
24 wrong types of land uses out of these  
25 zones. As a result of the JLUS, these

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 regulations were strengthened even  
2 further to clarify that the intent of the  
3 airport overlay district is to prevent  
4 the concentration of large bodies of  
5 people and residential development in  
6 these zones. Wichita and Sedgwick County  
7 also adopted the Air Force base  
8 protection overlay district as a result  
9 of that JLUS. The zoning overlay  
10 surrounds the base and restricts building  
11 heights to 25 feet. Its purpose is to  
12 prevent -- is to protect the base from  
13 possible terrorist activities by  
14 preventing observation and launching of  
15 attacks. In addition, Wichita Area  
16 Association of Realtors has incorporated  
17 into its disclosure forms a notice that  
18 McConnell Air Force Base is an  
19 operational base and operates 24 hours a  
20 day and planes fly out of the base and  
21 they generate noise. It goes on to  
22 explain how a potential buyer can get  
23 more specific information so that we have  
24 informed buyers. And since I have the  
25 stop sign there, what I'd like to do is

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1 thank the Air Force for giving us this  
2 opportunity to testify. We are proud  
3 that McConnell and its personnel that  
4 serves its current mission to have them  
5 as members of our community, and we look  
6 forward to having them as a vital part of  
7 our community for years to come. Again,  
8 thank you for this opportunity.  
9 LT. COL. RICHARDSON: Thank you.  
10 Our next speaker is Claudio Ferraro, to  
11 be followed by Jack Pulley.  
12 MR. FERRARO: Good evening. I'm  
13 Claudio Ferraro. I'm the Senior  
14 Administrator for Via Christi St. Joseph  
15 Hospital and clinical service lines. I'm  
16 a past honorary wing commander and a  
17 current member of the Friends of  
18 McConnell organization. Via Christi  
19 Health is the largest provider of health  
20 care services in Kansas with its origin  
21 dating back to 1889. Based in Wichita,  
22 we serve Kansas and Northeast Oklahoma  
23 through our doctors, hospitals, senior  
24 villages and health services. I'm  
25 honored to have the privilege to share

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 some information about the state of  
2 health services capabilities here and how  
3 we are positioned to collaborate and  
4 support McConnell Air Force Base in its  
5 role as the home for the KC-46A tanker.  
6 Wichita and Southcentral region of the  
7 state are extremely fortunate to have  
8 world-class health services across the  
9 continuum from primary care to the most  
10 acute care services. Via Christi, HCA  
11 Wesley and other health care providers  
12 collectively provide some of the most  
13 high intensity care in services that are  
14 in place to augment McConnell's  
15 capabilities to ensure its mission is  
16 always in a state of readiness. We are  
17 here to serve its airmen, their  
18 dependents and its many civilian  
19 employees and their families. Some  
20 highlights of our collective capabilities  
21 include: Five acute care hospitals, four  
22 specialty hospitals, maternal fetal  
23 medicine, Level 3 NICU facilities and the  
24 most modern birth facilities and  
25 services, state of the art cancer

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1 treatment, cancer research and support  
2 services, wound care centers, Level 1  
3 trauma centers and ERs specializing in  
4 pediatric care, comprehensive pediatric  
5 outpatient/inpatient ERs, a regional burn  
6 center, accredited cardiac, neuro and  
7 epilepsy programs, joint commission  
8 accredited stroke centers, rehabilitation  
9 hospitals, a behavioral health hospital.  
10 In collaboration with KU, Wesley and  
11 Via Christi, over 250 residents are  
12 trained in 13 residency programs here in  
13 Wichita. We have an extensive network of  
14 primary care, imaging, ambulatory surgery  
15 and rehab clinics that exist throughout  
16 the region. Wichita is home to the  
17 Robert J. Dole VA Medical Center serving  
18 thousands of veterans across many Kansas  
19 counties for 75 years. As an active  
20 supporter of McConnell in a variety of  
21 capacities over the years, it is clear  
22 that this community and the health care  
23 sector have had a long and rich tradition  
24 in supporting McConnell since its  
25 inception. In addition to strong

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 partnerships in helping to ensure that  
2 McConnell maintains its mission  
3 readiness, we have been honored to serve  
4 side by side on base and in the community  
5 from air shows to working collaboratively  
6 during periods of local and regional  
7 disasters. Via Christi is very pleased  
8 the Air Force selected McConnell to be a  
9 preferred site for the new KC-46A tanker  
10 and we collectively stand behind and with  
11 our military colleagues in offering our  
12 support in these final stages of making  
13 this designation permanent. McConnell  
14 Air Force Base has been a tremendous  
15 asset to our Southcentral Kansas  
16 community, both from an economic and  
17 community partner standpoint. We believe  
18 there is no better choice among the site  
19 options being considered, therefore,  
20 Via Christi pledges our full support of  
21 McConnell Air Force Base and we stand  
22 ready to assist the Air Force and our  
23 community in the process of securing the  
24 final selection of the base as the home  
25 for the KC-46A tanker. Thank you.

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1 LT. COL. RICHARDSON: Thank you.  
2 Next speaker I'd like to welcome to the  
3 podium is Jack Pulley, to be followed by  
4 Wayne Roberts.  
5 MR. PULLEY: I'm Jack Pulley. I'm  
6 the Fleet Manager for the Davis-Moore  
7 Auto Group, but I'm here this evening as  
8 president of the Friends of McConnell. I  
9 thank you for the opportunity to speak on  
10 behalf of the Friends of McConnell. This  
11 is our region's civilian support  
12 organization for McConnell Air Force  
13 Base, its airmen and families. The  
14 activities and wide range of support that  
15 Friends of McConnell provide speaks  
16 volumes for the respect and admiration  
17 our businesses and residents have for the  
18 airmen at McConnell Air Force Base. If  
19 you would allow me to list just a few of  
20 the things that we've supported in the  
21 last few months. The annual and  
22 quarterly awards. We provide the money  
23 that give awards to the winners. The  
24 enlisted spouses has a program called  
25 Operation Holiday Surprise and what this

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 is is E-4 and down, we go and give them,  
2 actually pay their grocery bill when they  
3 check out at Christmastime and  
4 Thanksgiving time. The Officers' Spouses  
5 Scholarship Fund, McConnell top three  
6 senior NCO induction. Quarterly, we  
7 support the Hearts Apart which we have a  
8 dinner for the deployed's spouses, the  
9 Folds of Honor Golf Tournament, the  
10 Airman's Council, the annual awards  
11 program of the 931st Air Refueling Wing  
12 and the 184th Intelligent Wing, integral  
13 parts of Team McConnell. In addition,  
14 the base can always count on us, Friends  
15 of McConnell, to support the Tops in Blue  
16 performance when they come, the open  
17 house and air shows when we have them,  
18 Air Mobility Command rodeo, we send  
19 people with them and we cook for them and  
20 entertain them. We always provide for  
21 the Air Force ball and a number of  
22 squadron group and family celebrations  
23 throughout the year. We are an Air Force  
24 town. Air Force families are evident in  
25 every aspect of our communities. They're

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1 evident in our schools, in our churches,  
2 community theaters, parades, recreational  
3 programs, especially charitable and  
4 volunteer organizations, civic clubs and  
5 neighborhood associations. The merging  
6 of military and civilian is invisible.  
7 Here, we are all citizens of one  
8 community where the uniform you wear does  
9 not define you, it enhances you.  
10 Sometimes we go an extra mile. There  
11 have been instances that have occurred  
12 that the Friends of McConnell have  
13 stepped up. A couple examples, a  
14 deployed spouse came to her house around  
15 the Christmastime only to find her car on  
16 bricks or on blocks and her house cleaned  
17 out. And with a quick e-mail to all of  
18 our Friends of McConnell, we raised  
19 thousands of dollars to help her restore  
20 her life and her Christmas. Another  
21 instance was a young airman family that  
22 had a sick daughter that they couldn't  
23 afford to get to the other community that  
24 they needed to take her to for services.  
25 Again, we raised the money and helped

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 that young family take their daughter to  
2 that facility. And taking the McConnell  
3 message into the community is something  
4 we do frequently. Continual education of  
5 our citizens about the value of McConnell  
6 is something we relish doing, speaking to  
7 civic clubs, church groups and veterans  
8 groups whenever possible. Part of  
9 McConnell's mission statement is to  
10 guarantee that an assignment to McConnell  
11 is the best assignment of an airman's  
12 career, and judging from the number of  
13 compliments we receive, we think we're  
14 doing a pretty good job. Thank you for  
15 the opportunity to speak in support of  
16 McConnell Air Force Base becoming the  
17 best assignment for the new KC-46A  
18 tanker. Thank you very much.

19 LT. COL. RICHARDSON: Thank you.  
20 Next speaker I'd like to welcome to the  
21 podium is Wayne Roberts, to be followed  
22 by Victor White.

23 MR. ROBERTS: Good evening. My  
24 name is Wayne Roberts and I'm Chairman of  
25 the Tanker Task Force and the Joint

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1 Military Committee. The Tanker Task  
2 Force was formed when the competition  
3 began for the basing of the KC-46A. Our  
4 community leaders wanted to make sure we  
5 had a targeted approach to explain to Air  
6 Force officials why McConnell was the  
7 logical choice for the MOB 1. The  
8 Wichita Metro Chamber spearheaded  
9 bringing together all the interested  
10 parties into a task force that was  
11 targeted with getting out the message in  
12 a clear and concise manner. Our task  
13 force was represented by the Governors  
14 Military Council, Friends of McConnell,  
15 the Wichita Metro Chamber, the Wichita  
16 Independent Business Association,  
17 Sedgwick County, the cities of Wichita  
18 and Derby and retired Air Force  
19 personnel. The base has won over 80  
20 awards in the past 18 months. That's  
21 more than all the other Air Mobility  
22 Command bases put together. It's a  
23 strong case for the 46-A beddown at  
24 McConnell Air Force Base. You logically  
25 want to put the best planes where you

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 have the best personnel and the best  
2 performance. As you've heard from other  
3 speakers, this community wholeheartedly  
4 supports the airmen at McConnell. We've  
5 embraced them as an integral part of our  
6 community and continue to look for ways  
7 to show them that we recognize and  
8 appreciate the sacrifices they make to  
9 keep us free. We have heard time and  
10 time again from airmen to base leadership  
11 that they have never seen the support to  
12 the level we have in communities  
13 surrounding the base, and that's why so  
14 many of them return to Wichita and retire  
15 once they have completed their military  
16 service. We have over 10,000 retirees in  
17 Wichita, Derby and surrounding  
18 communities. During their military  
19 careers, they have been stationed in  
20 numerous locations both in the U.S. and  
21 around the world, and there is no greater  
22 compliment to have them select Wichita  
23 and our area as their final home. Our  
24 governmental entities, our business  
25 organizations and our citizens

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1 wholeheartedly support McConnell Air  
2 Force Base and look forward to being  
3 MOB 1 for the 46-A. Thank you.  
4 LT. COL. RICHARDSON: Thank you.  
5 Next speaker I'd like to welcome to the  
6 podium is Victor White, to be followed by  
7 Diana Alexander.  
8 MR. WHITE: Good evening. I'm  
9 Victor White, Director of Airports for  
10 the Wichita Airport Authority. On behalf  
11 of the City of Wichita Airport Authority,  
12 we would like to express our strong  
13 support for McConnell Air Force Base with  
14 respect to its selection as the Main  
15 Operating Base of the KC-46A tanker  
16 aircraft. The Airport Authority is the  
17 owner and operator of both Wichita  
18 Mid-Continent Airport and Colonel James  
19 Jabara Airport, the general aviation  
20 field here in the area. We believe that  
21 the Air Force should select McConnell for  
22 this mission for the following reasons  
23 that are directly related to the services  
24 and facilities that we have successfully  
25 and proudly provided to McConnell and

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 other military bases for a number of  
2 years. There are indeed synergies and a  
3 partnership between Mid-Continent Airport  
4 McConnell. McConnell tanker aircraft  
5 routinely conduct an average of 35 or  
6 more operations per month at  
7 Mid-Continent Airport. This includes  
8 touch-and-go operations as well as full  
9 stop, takeoffs and landings which are  
10 used for pilot training and efficiency  
11 missions. Mid-Continent Airport is open  
12 and available for McConnell aircraft in  
13 the event of weather, mechanical or  
14 emergency diversion situations. Just  
15 last week, for example, Mid-Continent  
16 hosted four KC-135 tanker aircraft for a  
17 couple of days during inclement weather  
18 when the instrument landing system at  
19 McConnell was under repair. The FAA air  
20 traffic control tower and radar approach  
21 control operators at Mid-Continent are  
22 highly trained and experienced in  
23 handling heavy jet tanker traffic and  
24 other military aircraft operations.  
25 Because of the airport's full service and

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1 all-weather capabilities, it has become  
2 the facility of choice for not just  
3 McConnell aircraft but those from other  
4 Air Force bases and other military  
5 services as well who routinely operate in  
6 and out of Mid-Continent. Our fixed base  
7 service operators have fueling  
8 capabilities and government contracts  
9 which permit them to provide aircraft  
10 refueling to literally any military  
11 aircraft. The airport has plenty of ramp  
12 space to accommodate the temporary  
13 parking and support operations for  
14 tankers during a stop here. The airport  
15 has a 24-hour air traffic control tower  
16 and radar approach control which  
17 currently provides radar guidance to  
18 McConnell aircraft. The airport has a  
19 24-hour airport police and fire  
20 department which is capable of providing  
21 emergency services and security  
22 protection for tanker aircraft while on  
23 the ground. The airport has inspectors  
24 from U.S. Customs and Border Protection  
25 to handle inbound international aircraft

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 as well. Other Air Force bases in  
2 Oklahoma and throughout the region use  
3 Mid-Continent for pilot training already  
4 due to our capabilities and because air  
5 traffic here is less than in surrounding  
6 states. There are approximately 1200  
7 military operations a month here as a  
8 result of the airport being the facility  
9 of choice in the region. Because those  
10 aircraft come to Mid-Continent to train,  
11 it leaves McConnell free to operate  
12 without any interference. The airspace  
13 surrounding Wichita is relatively  
14 uncongested and has plenty of capacity to  
15 handle many more operations than  
16 currently come into both McConnell and  
17 Mid-Continent. And this part of the  
18 country has wide open airspace, clear  
19 skies and outstanding weather that is  
20 conducive to the placement of air  
21 refueling flight tracks by the tankers.  
22 One of the reasons for that is that these  
23 tracks were established in areas that  
24 don't conflict with highly used airliner  
25 routes. We greatly appreciate this

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1 opportunity to comment on this project  
2 and look forward to a positive outcome in  
3 favor of McConnell. Thank you.  
4 LT. COL. RICHARDSON: Thank you.  
5 The next speaker I'd like to welcome is  
6 Diana Alexander, to be followed by Leon  
7 Skelton.  
8 MS. ALEXANDER: Good evening.  
9 Hello. I'm Diana Alexander and I do  
10 appreciate this opportunity to comment on  
11 the 46-A tanker issue and the awarding of  
12 this contract to McConnell. I do believe  
13 that they really truly are the best  
14 choice as a lifelong Wichitan, and also  
15 part of the reason why I am here is  
16 because of the tragedy that happened in  
17 1965 on 21st and Piatt. My parents lived  
18 at 21st and Grove and in listening to the  
19 other speakers and watching their  
20 presentation, I do think that McConnell  
21 would be the best place for it because  
22 they seem to be -- their safety record is  
23 quite good with the KC-135s. There  
24 hasn't been a repeat of what happened  
25 that day. And also I was looking at the

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A.7.3.12 *McConnell AFB Public Hearing Transcript (Continued)*

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1 specs on the KC-46 and if it can survive  
2 a nuclear attack, I'm thinking that it's  
3 probably a bit more at the very least  
4 crashworthy than the KC-135. And I also  
5 feel that another thing that should be  
6 considered is the -- I would hope that  
7 even though Boeing has left our fair city  
8 that the close relationship between  
9 McConnell and Boeing will continue and  
10 that they will be able to put in input on  
11 the KC-46A. And in closing, another  
12 thing that I am concerned about is if  
13 there's any emergency plans that might be  
14 put into place or any sort of disaster  
15 training scenarios that could be put into  
16 place to avoid -- if a tragedy like that  
17 would happen again, God forbid, we don't  
18 want that and I'm thinking -- and, like I  
19 said, I was looking at the specs of the  
20 KC-46 and I don't think that's likely,  
21 but we do need to make preparations for  
22 and plans for disasters whether they  
23 occur or not. Thank you very much.  
24 Goodbye.

25 LT. COL. RICHARDSON: Thank you.

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1 Our next speaker is Leon Skelton, to be  
2 followed by David Hitchcock.  
3 MR. SKELTON: By the way, just to  
4 clear one thing up, I'm not related to  
5 Councilman Skeleton. I grew up in  
6 Syracuse, New York and I spent 30 years  
7 in the United States Air Force. I'm a  
8 retired Chief Master Sergeant and why do  
9 I live here now. I was stationed here  
10 back when there were missiles here, so  
11 you can see I'm old. But anyways, I came  
12 back here after I retired out of the Air  
13 Force because this was a great place to  
14 live. When I was stationed here, I said  
15 I've got to come back here to live. And  
16 the reason I do is I'll explain this to  
17 you in the best way I can. Everybody  
18 else has had an opportunity to say  
19 something that was very well for this  
20 community. But anyways, I get the  
21 opportunity every class that graduates  
22 the young airmen that go through their  
23 first leadership class at McConnell Air  
24 Force Base, I have the opportunity to  
25 speak to them and I have done that for 14

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 years and I always ask this question.  
 2 How many of you are college graduates and  
 3 how many of you are going to college.  
 4 It's surprising how many of our young  
 5 airmen today are going to college here.  
 6 We have the best opportunities any place  
 7 for young airmen to go to college. And  
 8 the reason I care about young airmen is  
 9 because I had a lot of them that worked  
 10 for me and I had a lot of them that I  
 11 cared about, worried about and thought  
 12 about what was going to happen to them in  
 13 their lives, and one of the most  
 14 important things to the people that fix  
 15 these airplanes and fly them is that  
 16 their families are going to be okay while  
 17 they're gone and that they have an  
 18 opportunity in life to get ahead. This  
 19 is the best place they can go to  
 20 technical school here, as a matter of  
 21 fact, they can learn to fly here. They  
 22 teach at -- K-State has one of the best  
 23 flying there is. But the opportunities  
 24 here for the young airmen that we have  
 25 and even the young officers that we have

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1 today are great, and if there's any one,  
 2 I don't know what it is. You probably  
 3 heard a good friend of mine that works  
 4 for Davis-Moore came out here and talked  
 5 and what goes on. I think this is one of  
 6 the greatest places for young people to  
 7 come for opportunities in their families,  
 8 in their future for them because, as you  
 9 know, when we go to war, it's not fun.  
 10 I've been there and I did that and it's  
 11 not a lot of fun. The biggest thing you  
 12 worry about is your family. In Vietnam  
 13 when you used to want to talk to your  
 14 families on the phone and your wife  
 15 called, you had to get ahold of your wife  
 16 and you finally got ahold of her and you  
 17 always went through the Mars station and  
 18 all these people plugged you in and you'd  
 19 call your wife and she'd say the washing  
 20 machine's broke, honey, and you said,  
 21 well, get it fixed. And she'd say over  
 22 and it would come to you. The next time  
 23 you finally got ahold of her, she would  
 24 write a letter and say I got a new wash  
 25 machine. But anyways, the things that

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 happen today people worry about, and we  
2 want to make it less worried for these  
3 kids and these men that fly these  
4 airplanes as they can, and McConnell Air  
5 Force Base and this community does an  
6 excellent job. I am proud to have the  
7 opportunity to be called a Kansan. And  
8 just to close I'll say this. I went back  
9 to New York for my 60th high school  
10 graduation and I was asked this question,  
11 what do you think you're doing living in  
12 Kansas, and I always say it's the best  
13 place of all the places that I've lived  
14 is McConnell Air Force Base in Kansas. I  
15 think that the young men that come here,  
16 it's the most important thing -- you can  
17 have all the Environmental Impact Studies  
18 and everything you want to, but you want  
19 to worry about the young people flying  
20 and fixing them that them and their  
21 families have a good place to live.  
22 Thank you very much for this opportunity.  
23 LT. COL. RICHARDSON: Thank you.  
24 The next speaker I'd like to welcome to  
25 the podium is David Hitchcock, to be

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1 followed by Tim Witsman.  
2 MR. HITCHCOCK: Good evening,  
3 everyone. My name is David Hitchcock. I  
4 spent 23 years at Boeing, part of which  
5 time I was a government contracts  
6 manager, in interim contractor support  
7 for the ECP-405 program concerning the  
8 KC-135s and also fleet support. So I say  
9 that only to convey to you that my  
10 interest in the KC-46A is not a casual  
11 interest. There's little I can say that  
12 hasn't already been said, but in hearing  
13 everything that has been said both about  
14 McConnell Air Force Base and Wichita and  
15 the surrounding communities, I'm reminded  
16 of the slogan that the Phillips 66  
17 company used to have, it's performance  
18 that counts, and I would ask all our good  
19 representatives of the Air Force who are  
20 with us tonight to remember that. I know  
21 we are supposed to speak to the EIS, but  
22 I would like to stress that if it is  
23 performance that counts, please consider  
24 what you have heard from so many of my  
25 fellow citizens tonight. I'm here only

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*A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)*

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1 as a citizen. I am retired, but I follow  
2 what McConnell does very closely and I  
3 would like to endorse everything that has  
4 been said. If I could speak to one point  
5 concerning the EIS, I heard some  
6 discussion about noise. Well, I first  
7 became acquainted with McConnell back in  
8 the early 1950s when they were training  
9 B-47 flight crews and maintenance people  
10 to service that airplane. Then came the  
11 F-105, then came the F-4 and after that  
12 came the F-16 and the B-1 Bomber. We did  
13 have missiles for a time but, thank God,  
14 we did not hear much from them by the way  
15 of noise. And finally, the KC-135  
16 tankers. I think the gentlemen and  
17 ladies from the Air Force know by now  
18 that we're married, in effect, to  
19 McConnell Air Force Base. So I hope that  
20 as you consider the findings of the EIS  
21 and compare those with the performance of  
22 McConnell, you will leave this meeting  
23 assured that this community does support  
24 McConnell, we're proud of their mission,  
25 and if there are any EIS issues that need

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1 to be addressed in the positive spirit  
2 that both we and McConnell have, those  
3 will be well taken care of. I thank you  
4 for this opportunity. Wish you all a  
5 good evening.  
6 LT. COL. RICHARDSON: Thank you.  
7 Our next speaker is Tim Witsman, to be  
8 followed by Brian McDaniel.  
9 MR. WITSMAN: Thank you very much  
10 for the opportunity. I'm Tim Witsman and  
11 I'm President of the Wichita Independent  
12 Business Association. I'll have very  
13 short remarks and they're really about  
14 the support of the business community for  
15 McConnell. Wichita Independent Business  
16 Association/Kansas Independent Business  
17 Coalition, which we call WIBA, is an  
18 association of nearly 500 Kansas  
19 businesses that are not publicly traded  
20 companies. WIBA's been in existence for  
21 over 82 years. We have partnered with  
22 the Wichita Regional Chamber of Commerce  
23 to establish a Joint Military Affairs  
24 Committee. The preponderance of our  
25 members do not directly gain from the

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1 presence of McConnell Air Force Base. We  
2 are, however, keenly aware of McConnell's  
3 importance and pay more than lip service  
4 to supporting the base and its mission.  
5 WIBA's Chairman Elect, Wayne Roberts, is  
6 Chairman of the Joint WIBA Wichita Area  
7 Chamber Military Affairs Committee and  
8 has played a lead role in demonstrating  
9 the community support for the mission of  
10 home base for the new tanker fleet. In  
11 June, a representative from McConnell was  
12 the featured speaker at WIBA's monthly  
13 luncheon, and on Tuesday, the 25th, I  
14 will introduce the Vice Commander of the  
15 Wing to a presentation of over 200 people  
16 at Wichita Downtown Rotary. We have  
17 members who are Friends of McConnell and  
18 some who are also Golden Eagles and I  
19 served four years as an honorary  
20 commander for mission support out there.  
21 You may be certain that the Wichita area  
22 business community is deeply engaged in  
23 ensuring the growth of the healthy  
24 partnership between McConnell Air Force  
25 Base and the Southcentral region of

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1 Kansas. If there are any ways that we  
2 might be helpful to the review team, we  
3 stand ready to respond. Thank you.  
4 LT. COL. RICHARDSON: Thank you.  
5 And the last speaker I've got written  
6 down here to welcome to the podium is  
7 Brian McDaniel.  
8 MR. MCDANIEL: Greetings, everyone.  
9 Thanks for the opportunity. My name is  
10 Brian McDaniel. I spent 12 years out  
11 here at McConnell, grew up around  
12 Wichita. Where Cedar Crest is now  
13 located, we farmed that plus a half mile  
14 east -- we had from the creek to half  
15 mile east of 119th Street and a half mile  
16 north, so I have been very fortunate --  
17 three companies owned me, we don't own  
18 companies, they own us, and the clients  
19 are the people who really end up giving  
20 us directions, and having been an air  
21 traffic controller for 12 years in  
22 Vietnam, Greenland, California, many  
23 different places, having trained many,  
24 many air traffic controllers right out  
25 here at McConnell, I say thank you for

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1 the opportunity to possibly have the  
2 C-46A at McConnell. Thank you and good  
3 evening.  
4 LT. COL. RICHARDSON: Thank you.  
5 We've heard from everyone who signed up  
6 to speak. Is there anyone who would like  
7 to speak -- well, rather, if there is  
8 anyone who would like to speak and hasn't  
9 done so, you can raise your hand and Beth  
10 will get a card to you.  
11 Okay. It appears we have no  
12 more remaining speakers. As I mentioned  
13 earlier, Air Force representatives will  
14 continue to be available over by the  
15 display boards to continue any  
16 discussions. However, discussions that  
17 take place at the boards will not be part  
18 of the official record of the EIS. I  
19 thank you for your time and interest.  
20 Tonight is not the end of your  
21 opportunity to participate in the  
22 environmental review process. Again,  
23 written comment sheets are available at  
24 the registration table. You can turn  
25 these sheets in tonight or mail them

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1 later. If you would like your own copy  
2 of the Final EIS, please let one of the  
3 representatives at the registration table  
4 know or send a letter or post card asking  
5 for your own copy. The Air Force will  
6 send copies of the Final EIS to you.  
7 At this point, the hearing is  
8 in recess and will adjourn at 8:00 p.m.  
9 if it's not reconvened earlier. Thank  
10 you.

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(15) specifically - together

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transcript (1)				

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(16) Toni - Wichitans

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## A.7.3.12 McConnell AFB Public Hearing Transcript (Continued)

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<b>Worth (1)</b>				

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<b>66 (1)</b>				
87:16				
<b>7</b>				
<b>7:30 (1)</b>				
29:13				
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<b>82 (1)</b>				
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<b>931st (2)</b>				
32:15;72:11				

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## A.8 FINAL EIS MAILING LIST

### KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Altus AFB Library					Altus	OK			1
Altus AFB, OK	Altus Public Library					Altus	OK			1
Altus AFB, OK	Altus/Quartz Mountain Regional Airport					Altus	OK			1
Altus AFB, OK	Amarillo Public Library					Amarillo	TX			1
Altus AFB, OK	Clinton-Sherman Industrial Airpark/OSIDA					Burns Flat	OK			1
Altus AFB, OK	Comanche Nation of Oklahoma	THPO		Arterberry	Jimmy	Lawton	OK			1
Altus AFB, OK	FAA, Southwest Region		Administrator	Bruner	Teresa	Fort Worth	TX			1
Altus AFB, OK	Fort Worth Alliance Airport			Ash	Christopher	Fort Worth	TX			1
Altus AFB, OK	Fort Worth Meacham International Airport					Fort Worth	TX			1
Altus AFB, OK	KWHN/KQ106			Esparza	Mary	Altus	OK	1		1
Altus AFB, OK	Lawton Public Library					Lawton	OK			1
Altus AFB, OK	Mahon Public Library					Lubbock	TX			1
Altus AFB, OK	Oklahoma Natural Heritage Inventory		Agency Representative			Norman	OK			1
Altus AFB, OK	Osage Nation	THPO		Munkres	James	Pawhuska	OK			1
Altus AFB, OK	Preston Smith International Airport		Aviation Director	Loomis	James	Lubbock	TX			1

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Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	Rick Husband Amarillo International Airport		Aviation Director	Rhodes	Patrick	Amarillo	TX			1
Altus AFB, OK	Summerglenn Library					Fort Worth	TX			1
Altus AFB, OK	Texas Commission on Environmental Quality		Executive Director	Covar	Zak	Austin	TX			1
Altus AFB, OK	Texas Department of Transportation		Executive Director	Wilson	Phil	Austin	TX			1
Altus AFB, OK	Texas Historical Commission					Austin	TX			1
Altus AFB, OK	Texas Parks and Wildlife Department					Austin	TX			1
Altus AFB, OK	U.S. Fish and Wildlife Service, Southwest Region			Tuggle	Benjamin	Albuquerque	NM			1
Altus AFB, OK	USEPA, Region 6					Dallas	TX			1
Altus AFB, OK				Baker	Kevin	Altus	OK			1
Altus AFB, OK	Altus City Attorney			Coke	Catherine	Altus	OK	1	1	
Altus AFB, OK	Altus City Council		Councilmembers			Altus	OK	1	1	
Altus AFB, OK	Altus Emergency Management Services			Colston	Lloyd	Altus	OK	1		
Altus AFB, OK	Altus High School			Haught	Mark	Altus	OK	1	1	
Altus AFB, OK	Altus Police Department		Chief of Police	Patterson	Mike	Altus	OK	1	1	
Altus AFB, OK	Board of County Commissioners		Commissioners			Altus	OK	1	1	

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Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
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Altus AFB, OK	Chamber of Commerce	Humphrey's Co-Op	Board Member	Bain	Jantz	Altus	OK	1	1	
Altus AFB, OK	Altus Police Department		Mr.	Murphy	Tim	Altus	OK	1		
Altus AFB, OK	Chamber of Commerce	First National Bank	Board Member	Bull	Kerry	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Altus Christian Academy	Board Member	Darby	Dana	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	First State Bank	Board Member	Doughty	N. Lee	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	NBC Oklahoma	Board Member	Gover	Jim	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Hokett Construction	Board Member	Hokett	Shane	Blair	OK	1	1	
Altus AFB, OK	Chamber of Commerce	southwest Technology Center	Board Member	Kerr	Rodger	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Tamarack Retirement Center	Board Member	Kruska	Mary	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	-	Board Member	Leverett	Joe	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Belles & Beaux	Board Member	Martin	Krystal	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Boeing	Board Member	Norris	Jim	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	First United Methodist Church	Board Member	Player	David	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	Integrus Family Care Altus	Board Member	Pruitt	Brenda	Altus	OK	1	1	

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Altus AFB, OK	Chamber of Commerce	Agriculture Affairs Committee	Board Member	Robbins	Danny	Altus	OK	1	1	
Altus AFB, OK	Chamber of Commerce	City of Altus	Board Member	Webb	David	Altus	OK	1	1	
Altus AFB, OK	City of Altus		Administrator	Gray	Elizabeth	Altus	OK	1	1	
Altus AFB, OK	City of Altus City Council		Councilmembers			Altus	OK	1	1	
Altus AFB, OK	City of Altus Mayor's Office		Mayor	Webb	David	Altus	OK	1	1	
Altus AFB, OK	City of Altus Planning and Development		Planning Director	Burleson	Barbara	Altus	OK	1	1	
Altus AFB, OK	City of Altus, Attorney			Coke	Catherine	Altus	OK	1	1	
Altus AFB, OK	City of Amarillo Mayor's Office		Mayor	Harpole	Paul	Amarillo	TX	1	1	
Altus AFB, OK	City of Amarillo Planning Department		Planning Director	Shaw	Kelley	Amarillo	TX	1	1	
Altus AFB, OK	City of Clinton Planning Department					Clinton	OK	1	1	
Altus AFB, OK	City of Elk City					Elk City	OK	1	1	
Altus AFB, OK	City of Fort Worth Mayor's Office		Mayor	Price	Betsy	Fort Worth	TX	1	1	
Altus AFB, OK	City of Fort Worth Planning and Development		Director	Harwood	Randall	Fort Worth	TX	1	1	
Altus AFB, OK	City of Lubbock					Lubbock	TX	1	1	
Altus AFB, OK	City of Lubbock Mayor's Office		Mayor	Robertson	Glen	Lubbock	TX	1	1	

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Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
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Altus AFB, OK	Committee of 100	Lucas Farms	Chairman	Lucas	Eva	Elmer	OK	1	1	
Altus AFB, OK	Jackson County EMS			Cecil	Shaun	Altus	OK	1		
Altus AFB, OK	Jackson County Sheriff		Sherriff	Levick	Roger	Altus	OK	1		
Altus AFB, OK	Lawton Constitution			Meador	Mitch	Lawton	OK	1		
Altus AFB, OK	Lubbock County Clerk's Office			Pinion	Kelly	Lubbock	TX	1	1	
Altus AFB, OK	Lubbock International Airport					Lubbock	TX			1
Altus AFB, OK	Military Affairs Committee	Hokett Construction	Director	Hokett	Shane	Blair	OK	1	1	
Altus AFB, OK	Military Affairs Committee	-	President, Chairman	Leverett	Joe	Altus	OK			
Altus AFB, OK	Oklahoma Highway Patrol in Altus		Mr.	Freeman	Johnny	Altus	OK	1		
Altus AFB, OK	Potter County Clerk's Office			Smith	Julie	Amarillo	TX	1	1	
Altus AFB, OK	Southwest Technical College			McCormack	Douglas	Altus	OK	1	1	
Altus AFB, OK	State Senate, Texas District 10		Senator	Davis	Wendy	Fort Worth	TX	1	1	
Altus AFB, OK	State Senate, Texas District 28		Senator	Duncan	Robert L	Lubbock	TX	1	1	
Altus AFB, OK	State Senate, Texas District 31		Senator	Seliger	Kel	Amarillo	TX	1	1	
Altus AFB, OK	State Senate, Texas District 9		Senator	Hancock	Kelly	Austin	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Fullo	John M.	Lubbock	TX	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST(Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Altus AFB, OK	State, House of Representatives		Representative	Perry	Charles	Lubbock	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Price	Four	Amarillo	TX	1	1	
Altus AFB, OK	State, House of Representatives		Representative	Strickland	Jonathan	Austin	TX	1	1	
Altus AFB, OK	Tarrant County Clerk's Office			Garcia	Mary Louise	Fort Worth	TX	1	1	
Altus AFB, OK	Texas Governor's Office		Governor	Perry	Rick	Austin	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Lucas	Frank D.	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Marchant	Kenny	Washington	DC	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Marchant	Kenny	Irving	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Neugebauer	Randy	Lubbock	TX	1	1	
Altus AFB, OK	U.S. House of Representatives		Congressman	Thornberry	Mac	Amarillo	TX	1	1	
Altus AFB, OK	U.S. Senate, Texas		Senator	Cornyn	John	Lubbock	TX	1	1	
Altus AFB, OK	U.S. Senate, Texas		Senator	Cruz	Ted	Houston	TX	1	1	
Altus AFB, OK	Western Oklahoma State College			Greer	Kristy	Altus	OK	1	1	
Altus AFB, OK				Jones	Christopher & Deanna	Altus	OK			1
Altus AFB, OK				Moore	Tom	Altus	OK	1		
Altus AFB, OK			Ms.	Fortuna	Bonnie	Altus	OK	1		
Altus AFB, OK			Mr.	Moore	Tom	Altus	OK	1		

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	City of Airway Heights			Tripp	Albert	Airway Heights	WA			1
Fairchild AFB, WA	Coeur d'Alene Tribe		Chairman	Allen	Chief	Plummer	ID			1
Fairchild AFB, WA	Coeur d'Alene Tribe	THPO		Wagner	Jill	Plummer	ID			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation	THPO	Acting THPO	Moura	Guy	Nespelem	WA			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation		Business Council Chairman	Finley	Michael	Nespelem	WA			1
Fairchild AFB, WA	Department of Archaeology & Historic Preservation		State Historic Preservation Officer	Brooks	Allyson	Olympia	WA			1
Fairchild AFB, WA	Department of Ecology Washington State		Water Quality	Duncan	Dave	Spokane	WA			1
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife Washington		Regional Director	Andrews	John	Spokane Valley	WA			1
Fairchild AFB, WA	Department of Transportation Washington		Se Transportation	Peterson	Lynn	Olympia	WA			1
Fairchild AFB, WA	Fairchild AFB Library					Fairchild AFB	WA			1
Fairchild AFB, WA	Fairfield Inn and Suites			Swavely	Paul	Spokane	WA			1
Fairchild AFB, WA	FAA, Northwest Mountain		Regional Admin.	Vernon	Kathryn	Renton	WA			1
Fairchild AFB, WA	GSI			Jawara	Sandra	Spokane	WA			1
Fairchild AFB, WA	Kalispell Indian Community		Chairman	Nenema	Glen	Usk	MN			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Neighborhood Alliance			Krupp	Paul	Spokane	WA			1
Fairchild AFB, WA	Spokane International Airport			Holmes	David	Spokane	WA			1
Fairchild AFB, WA	Spokane Public Library					Spokane	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians		Chairman	Peone	Rudy	Wellpinit	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians	THPO		Abrahamson	Randy	Wellpinit	WA			1
Fairchild AFB, WA	U.S. Forest Service, Colville National Forest		Supervisor	West	Laura Jo	Colville	WA			1
Fairchild AFB, WA	U.S. Forest Service, Region 6, Pacific NW		Director	Linares	Jose	Portland	OR			1
Fairchild AFB, WA	USEPA Region 10		Regional Administrator	McLerran	Dennis E.	Seattle	WA			1
Fairchild AFB, WA	City of Airway Heights			Tripp	Albert	Airway Heights	WA			1
Fairchild AFB, WA	Coeur d'Alene Tribe		Chairman	Allen	Chief	Plummer	ID			1
Fairchild AFB, WA	Coeur d'Alene Tribe	THPO		Wagner	Jill	Plummer	ID			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation	THPO	Acting THPO	Moura	Guy	Nespelem	WA			1
Fairchild AFB, WA	Confederated Tribes of the Colville Reservation		Business Council Chairman	Finley	Michael	Nespelem	WA			1
Fairchild AFB, WA	Dept. of Archaeology & Historic Preservation		State Historic Preservation Officer	Brooks	Allyson	Olympia	WA			1
Fairchild AFB, WA	Department of Ecology Washington State		Water Quality	Duncan	Dave	Spokane	WA			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife Washington		Regional Director	Andrews	John	Spokane Valley	WA			1
Fairchild AFB, WA	Department of Transportation Idaho		Executive Director	Wilson	Phil	Austin	TX			1
Fairchild AFB, WA	Department of Transportation Washington		Secretary of Transportation	Peterson	Lynn	Olympia	WA			1
Fairchild AFB, WA	Fairchild AFB Library					Fairchild AFB	WA			1
Fairchild AFB, WA	Fairfield Inn and Suites			Swavely	Paul	Spokane	WA			1
Fairchild AFB, WA	FAA, Northwest Mountain		Regional Administrator	Vernon	Kathryn	Renton	WA			1
Fairchild AFB, WA	GSI			Jawara	Sandra	Spokane	WA			1
Fairchild AFB, WA	Kalispell Indian Community		Chairman	Nenema	Glen	Usk	MN			1
Fairchild AFB, WA	Neighborhood Alliance			Krupp	Paul	Spokane	WA			1
Fairchild AFB, WA	Spokane International Airport			Holmes	David	Spokane	WA			1
Fairchild AFB, WA	Spokane Public Library					Spokane	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians		Chairman	Peone	Rudy	Wellpinit	WA			1
Fairchild AFB, WA	Spokane Tribe of Indians	THPO		Abrahamson	Randy	Wellpinit	WA			1
Fairchild AFB, WA	U.S. Forest Service, Colville National Forest		Supervisor	West	Laura Jo	Colville	WA			1
Fairchild AFB, WA	U.S. Forest Service, Region 6, Pacific Northwest		Director	Linares	Jose	Portland	OR			1
Fairchild AFB, WA	USEPA Region 10		Regional Administrator	McLerran	Dennis E.	Seattle	WA			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	USFWS Pacific Region		Regional Director	Thorson	Robyn	Portland	OR			1
Fairchild AFB, WA	USFWS Upper Columbia Office		NEPA Program Coordinator			Spokane Valley	WA			1
Fairchild AFB, WA	Washington Air National Guard					Fairchild AFB	WA			1
Fairchild AFB, WA	Washington Pilots Association		Legislative Director	Townsley	John	Spokane	WA			1
Fairchild AFB, WA				Brantner	Christy	Spokane	WA			1
Fairchild AFB, WA	Blair Elementary School					Fairchild AFB	WA	1	1	
Fairchild AFB, WA	City of Airway Heights Planning Department		City Planner	Braaten	Derrick	Airway Heights	WA	1	1	
Fairchild AFB, WA	City of Airway Heights Planning Department					A. Heights	WA	1	1	
Fairchild AFB, WA	City of Coeur d'Alene Planning Commission		Planning Director	Yadon	Dave	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	City of Spokane			Condon	David	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane			Weinand	Kathleen	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane Mayor's Office		Mayor	Condon	David	Spokane	WA	1	1	
Fairchild AFB, WA	City of Spokane Planning and Development		Planning Director	Chesney	Scott	Spokane	WA	1	1	
Fairchild AFB, WA	Forward Fairchild			Bever	Greg	Spokane	WA			1
Fairchild AFB, WA				Sawdy	Richard	Spokane	WA	1		
Fairchild AFB, WA	Washington Dept. of Fish and Wildlife		Regional Director	Gamon	John					1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

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								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Garco Construction			Barnett	Hollis	Spokane	WA	1		
Fairchild AFB, WA	Gonzaga University			Pritchard, Jr.	Russell	Spokane	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Crouse	Larry	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Holy	Jeff	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Ormsby	Timm	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Parker	Kevin	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Riccelli	Marcus	Olympia	WA	1	1	
Fairchild AFB, WA	House of Representatives		Representative	Shea	Matt	Olympia	WA	1	1	
Fairchild AFB, WA	Idaho Governor's Office		Governor	Otter	C.L. "Butch"	Boise	ID	1	1	
Fairchild AFB, WA	International Triad Alliance			McCoy	Matt	Spokane	WA	1		
Fairchild AFB, WA	Lydig Construction			Reese	Tom	Spokane	WA	1		
Fairchild AFB, WA	Medical Lake School District			Munther	Terry	Medical Lake	WA	1	1	
Fairchild AFB, WA	Park College 92 MSS/DPE					Fairchild AFB	WA	1	1	
Fairchild AFB, WA	Spokane Association of Realtors			Higgins	Rob	Spokane	WA			
Fairchild AFB, WA	Spokane Community College			Brown	Terrance	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane County		County Clerk			Spokane	WA	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Fairchild AFB, WA	Spokane County Commissioner			French	Albert	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane County Planning Department					Spokane	WA	1	1	
Fairchild AFB, WA	Spokane Regional Clean Air Agency		Air Quality Engineer	Southwell	Joe	Spokane	WA	1	1	
Fairchild AFB, WA	Spokane Transit Authority			Meyer	E. Susan	Spokane	WA	1	1	
Fairchild AFB, WA	STRATA			Murphey	James	Spokane	WA	1		
Fairchild AFB, WA	U.S. House of Representatives		Congresswoman	McMorris Rodgers	Cathy	Spokane	WA	1	1	
Fairchild AFB, WA	U.S. House of Representatives		Congressman	Labrador	Raul R.	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Crapo	Mike	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. Senate, Idaho		Senator	Risch	James E.	Coeur d'Alene	ID	1	1	
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Cantwell	Maria	Spokane	WA	1	1	
Fairchild AFB, WA	U.S. Senate, Washington		Senator	Murray	Patty	Spokane	WA	1	1	
Fairchild AFB, WA	Washington Governor's Office		Governor	Inslee	Jay	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 3		Senator	Billig	Andy	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 4		Senator	Padden	Mike	Olympia	WA	1	1	
Fairchild AFB, WA	Washington State Senate, District 6		Senator	Baumgartner	Michael	Olympia	WA	1	1	
Fairchild AFB, WA			Mr.	Spino	Pat	Spokane	WA			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Base Realignment Impact Center			Blair	Diane	Grand Forks	ND			1
Grand Forks AFB, ND	Bois Forte Band of Chippewa Indians		Chairman	Leecy	Kevin	Nett Lake	MN			1
Grand Forks AFB, ND	Bois Forte Band of Chippewa Indians	THPO		Berens	Rosemary	Nett Lake	MN			1
Grand Forks AFB, ND	USBIA, Great Plains Regional Office		Deputy Regional Director			Aberdeen	SD			1
Grand Forks AFB, ND	U.S. Bureau of Reclamation		Area Manager	Breitzman	Dennis E.	Bismarck	ND			1
Grand Forks AFB, ND	U.S. Bureau of Reclamation		Regional Director	Ryan	Michael J.	Billings	MT			1
Grand Forks AFB, ND	Cheyenne River Sioux Tribe		Chairman	Keckler	Kevin	Eagle Butte	SD			1
Grand Forks AFB, ND	Cheyenne River Sioux Tribe	THPO		Vance	Steve	Eagle Butte	SD			1
Grand Forks AFB, ND	City of Grand Forks			Storstad	Maureen	Grand Forks	ND			1
Grand Forks AFB, ND	North Dakota Commission on Indian Affairs		Executive Director	Painte	Deborah A.	Bismarck	ND			1
Grand Forks AFB, ND	Crow Creek Sioux Tribe		Chairman	Sazue, Sr.	Brandon	Fort Thompson	SD			1
Grand Forks AFB, ND	Crow Creek Sioux Tribe	THPO		Wells	Wanda	Fort Thompson	SD			1
Grand Forks AFB, ND	FAA, Minn. Air Route Traffic Control Center			Nelson	Kelly	Minneapolis	MN			1
Grand Forks AFB, ND	FAA, Air Traffic Organization			Page, Jr.	John H.	Washington	DC			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	FAA, Great Lakes Region		Regional Administrator	Cooper	Barry	Des Plaines	IL			1
Grand Forks AFB, ND	FAA, Great Lakes Region			Obenauer	Steve	Bismarck	ND			1
Grand Forks AFB, ND	FAA, Southwest Region			McGrath	Roger	Fort Worth	TX			1
Grand Forks AFB, ND	Flandreau Santee Sioux		President	Reider	Anthony	Flandeau	SD			1
Grand Forks AFB, ND	Flandreau Santee Sioux	THPO		Weston	James B. "JB"	Flandeau	SD			1
Grand Forks AFB, ND	Fond du Lac Band of Lake Superior Chippewa		Chairwoman	Diver	Karen R.	Cloquet	MN			1
Grand Forks AFB, ND	Fond du Lac Band of Lake Superior Chippewa	THPO		Defoe	LeRoy	Cloquet	MN			1
Grand Forks AFB, ND	Grand Forks AFB Library					Grand Forks AFB	ND			1
Grand Forks AFB, ND	Grand Forks AFB, Base Ambassador			Towers	Ken	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Chamber of Commerce			Strom	Kimberly	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Public Library					Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks Regional Airport Authority		Facility Manager	Johnson	Steve	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Forks School District			Ericson	Vicki	Grand Forks	ND			1
Grand Forks AFB, ND	Grand Portage Band of Lake Superior Chippewa		Chairman	Deschampe	Norman W.	Grand Portage	MN			1
Grand Forks AFB, ND	Grand Portage Band of Lake Superior Chippewa	THPO		Gagnon	Mary Ann	Grand Portage	MN			1
Grand Forks AFB, ND	Job Service North Dakota			Fillion	Roy	Grand Forks	ND			1
Grand Forks AFB, ND	Leech Lake Band of Ojibwe		Chairwoman	Jones	Carri	Cas Lake	MN			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Leech Lake Band of Ojibwe	THPO		Lemon	Gina	Cas Lake	MN			1
Grand Forks AFB, ND	Leighton Broadcasting			Sanden	Duaine	Mentor	MN			1
Grand Forks AFB, ND	Lower Brule Sioux Tribe		Chairman	Jandrequ	Michael	Lower Brule	SD			1
Grand Forks AFB, ND	Lower Brule Sioux Tribe	THPO		Green	Clair	Lower Brule	SD			1
Grand Forks AFB, ND	Lower Sioux Indian Community		Tribal President	Prescott	Denny	Morton	MN			1
Grand Forks AFB, ND	Lower Sioux Indian Community	THPO		Morse	Anthony	Morton	MN			1
Grand Forks AFB, ND	MAC Committee			Schorsch	Pam	Grand Forks	ND			1
Grand Forks AFB, ND	Mandan, Hidatsa & Arikara Nation		Chairman	Hall	Tex G.	New Town	ND			1
Grand Forks AFB, ND	Mandan, Hidatsa & Arikara Nation	THPO		Crowsbreast	Elgin	New Town	ND			1
Grand Forks AFB, ND	Mille Lacs Band of Ojibwe		Chief Executive	Melanie	Benjamin	Onamia	MN			1
Grand Forks AFB, ND	Mille Lacs Band of Ojibwe	THPO		Weyaus	Natalie	Onamia	MN			1
Grand Forks AFB, ND	National Air Transportation Assoc.					Alexandria	VA			1
Grand Forks AFB, ND	Natural Resources Conservation Service		Acting Chief	Weller	Jason	Washington	DC			1
Grand Forks AFB, ND	Natural Resources Conservation Service		State Conservationist	Flores	J R	Bismarck	ND			1
Grand Forks AFB, ND	NDDOT District 3 - Devils Lake		District Engineer	Swenson	W.	Devils Lake	ND			1
Grand Forks AFB, ND	NDDOT District 6 - Grand Forks		District Engineer	Noehre	L.	Grand Forks	ND			1
Grand Forks AFB, ND	Nokak Electric Cooperative			Breidenbach	Steve	Grand Forks	ND	1		

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Aeronautics Commission		Executive Director	Ness	Gary R.	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Army National Guard					Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Army National Guard					Devils Lake	ND			1
Grand Forks AFB, ND	North Dakota Aviation Association		Chairman	Simmers	Robert	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Agriculture		Commissioner	Goehring	Doug	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Commerce					Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Health			Dwelle	Terry	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Department of Transportation		Director	Levi	Grant	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Division of Community Services		Director	Govig	Paul	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Energy Department		Energy and Information Security Program Manager	Rotenberger	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Forest Service		State Forester	Kotchman	Larry	Bottineu	ND			1
Grand Forks AFB, ND	North Dakota Game and Fish		Pilot	Faught	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Game and Fish Department		Director	Steinwand	Terry	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Parks and Recreation Department		Director	Zimmerman	Mark	Bismarck	ND			1
Grand Forks AFB, ND	North Dakota Pilots Association		President	Hanson	Paul	Emerado	ND			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

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								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Small Business Development Center			Randall	Chuck	Grand Forks	ND			1
Grand Forks AFB, ND	North Dakota State Water Commission		Research Analyst	Knudtson	Larry	Bismarck	ND			1
Grand Forks AFB, ND	Oglala Sioux Tribe		President	Brewer	Bryan	Pine Ridge	SD			1
Grand Forks AFB, ND	Oglala Sioux Tribe	THPO		Mesteth	Wilmer	Pine Ridge	SD			1
Grand Forks AFB, ND	Prairie Island Indian Community		Tribal Chairperson	Kohnen	Audrey	Welch	MN			1
Grand Forks AFB, ND	Red Lake Band of Chippewa		Chairman	Jourdain	Floyd	Red Lake	MN			1
Grand Forks AFB, ND	Rosebud Sioux Tribe of Indians		President	Scott	Cyril	Rosebud	SD			1
Grand Forks AFB, ND	Rosebud Sioux Tribe of Indians	THPO		Eagle Bear	Russell	Rosebud	SD			1
Grand Forks AFB, ND	Shakopee Mdewakanton Sioux Community		Chairman	Vig	Charlie	Prior Lake	MN			1
Grand Forks AFB, ND	Shakopee Mdewakanton Sioux Community	THPO		Wabasha	Leonard	Prior Lake	MN			1
Grand Forks AFB, ND	Sisseton-Wahpeton Oyate		Chairman	Shepherd	Robert	Agency Village	SD			1
Grand Forks AFB, ND	Sisseton-Wahpeton Oyate	THPO		Desrosiers	Dianne	Sisseton	SD			1
Grand Forks AFB, ND	Spirit Lake Tribe		Chairperson	Yankton	Roger	Fort Totten	ND			1
Grand Forks AFB, ND	Standing Rock Sioux Tribe		Chairman	Murphy	Charles	Fort Yates	ND			1
Grand Forks AFB, ND	Standing Rock Sioux Tribe	THPO		Young	Waste'Win	Fort Yates	ND			1
Grand Forks AFB, ND	State Historical Society of North Dakota		State Historic Preservation Officer	Paaverud, Jr.	Merlan	Bismarck	ND			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Turtle Mountain Band of Chippewa		Chairman	St. Clair	Merle	Belcourt	ND			1
Grand Forks AFB, ND	Turtle Mountain Band of Chippewa	THPO		Ferris	Kade	Belcourt	ND			1
Grand Forks AFB, ND	U.S. Advisory Council on Historic Preservation			Kilma	Don	Washington	DC			1
Grand Forks AFB, ND	U.S. Geological Survey		Supervisory Hydrologist	Lambrecht	Jason M.	Grand Forks	ND			1
Grand Forks AFB, ND	U.S. Geological Survey National Center		Acting Director	Kimball	Suzette	Reston	VA			1
Grand Forks AFB, ND	UND Aerospace			Trapnell	Ben	Grand Forks	ND			1
Grand Forks AFB, ND	Unmanned Applications Institute International			McDonald	Doug	Grand Forks	ND			1
Grand Forks AFB, ND	Upper Sioux Indian Community		Chairman	Jensvold	Kevin	Granite Falls	MN			1
Grand Forks AFB, ND	Upper Sioux Indian Community	THPO		LaBatte	Marlow	Granite Falls	MN			1
Grand Forks AFB, ND	USEPA Region 10		Acting Regional Administrator	Rushin	Carol	Denver	CO			1
Grand Forks AFB, ND	USEPA Region 8			Allen	Dana	Denver	CO			1
Grand Forks AFB, ND	USEPA Region 9			Hanley	James	Denver	CO			1
Grand Forks AFB, ND	USFWS			Ramirez	Michael	Devils Lake	ND			1
Grand Forks AFB, ND	USFWS		Pilot	Bayless	Shawn	Bismarck	ND			1
Grand Forks AFB, ND	USFWS Devils Lake		Deputy Project Leader	Alfonso	Jim	Devils Lake	ND			1
Grand Forks AFB, ND	USFWS Mountain-Prairie Region		Regional Director	Walsh	Noreen	Lakewood	CO			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	USFWS North Dakota Field Office		Mr.	Towner	Jeff	Bismarck	ND			1
Grand Forks AFB, ND	Veterans Service Office			Lombardi	Lou	Grand Forks	ND			1
Grand Forks AFB, ND	White Earth Band of Minnesota Chippewa		Chairwoman	Vizenor	Erma	White Earth	MN			1
Grand Forks AFB, ND	White Earth Band of Minnesota Chippewa	THPO		Lampi	Renee	White Earth	MN			1
Grand Forks AFB, ND	Yankton Sioux Tribe		Chairman	Cournoyer	Thurman	Wagner	SD			1
Grand Forks AFB, ND	Yankton Sioux Tribe	THPO	THPO	Gravatt	Lana M.	Wagner	SD			1
Grand Forks AFB, ND				Richards	Randy	Grand Forks	ND			1
Grand Forks AFB, ND				Richards	T.	Grand Forks	ND			1
Grand Forks AFB, ND				Ash	Duaine	Devils Lake	ND	1		
Grand Forks AFB, ND				Brusseau	Paul	Walhalla	ND	1		
Grand Forks AFB, ND				Kragnes	David	Felton	MN	1		
Grand Forks AFB, ND				Spivey	Anna	Langdon	ND	1		
Grand Forks AFB, ND	Alpine Aviation, Inc					Provo	UT	1	1	
Grand Forks AFB, ND	Cavalier County Commission		Commissioners			Langdon	ND	1	1	
Grand Forks AFB, ND	City of East Grand Forks Mayor's Office		Mayor	Stauss	Lynn	East Grand Forks	MN	1	1	
Grand Forks AFB, ND	City of Grand Forks			Kreun	Curt	Grand Forks	ND	1	1	
Grand Forks AFB, ND	City of Grand Forks		Mayor	Brown	Michael	Grand Forks	ND	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	City of Grand Forks Planning Department		City Planner	Gengler	Brad	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Civil Air Patrol (CAP)			Schuler	Ken	Grand Forks	ND	1	1	
Grand Forks AFB, ND	County of Grand Forks Planning & Zoning		County Planner	Magnunson	Lane	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Devils Lake Wetland Management District		District Wildlife Biologist	Fisher	Mark R.	Devils Lake	ND	1	1	
Grand Forks AFB, ND	Federal Aviation Administration Great Lakes Region			Cink	David	Grand Forks	ND	1	1	
Grand Forks AFB, ND	GF-EGF Chamber of Military Appreciation Committee		Chairperson	Holwerda	Danny	Grand Forks	ND			
Grand Forks AFB, ND	GFK Flight Support					Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks American Legion # 6			Green	Robert	Arvilla	ND	1		
Grand Forks AFB, ND	Grand Forks Board of Realtors			Colter	John	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Chamber of Commerce		President & CEO	Wilfahrt	Barry	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks City Council		Council Member	Gershman	Hal	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks City Council		Council Member	Glassheim	Eliot	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Commissioners		Commissioner			Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks County		Clerk/Treasurer	Drees	Vivian	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks County Board of Commissioners		Commission Chair	Triplett	Constance	Grand Forks	ND	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	Grand Forks County Commissioners		Commission Chairman	Malm	Gary	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Region		President	Thiessen	Klaue	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Grand Forks Regional Airport Authority					Grand Forks	ND			
Grand Forks AFB, ND	Greenberg Realty			Greenberg	Skip	Grand Forks	ND	1		
Grand Forks AFB, ND	National Association of State Aviation Officials					Silver Spring	MD	1	1	
Grand Forks AFB, ND	National Association of State Aviation Officials		Director	Taborsky	Larry	Bismarck	ND	1	1	
Grand Forks AFB, ND	National Business Aviation Association					Washington	DC	1	1	
Grand Forks AFB, ND	ND Department of Emergency Services		Adjutant General	Sprynczynatyk	David	Bismarck	ND	1		
Grand Forks AFB, ND	ND House of Representatives District 17		Representative	Owens	Mark S.	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 17		Representative	Sanford	Mark	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 18		Representative	Glasheim	Eliot	Grand Forks	ND	1	1	
Grand Forks AFB, ND	ND House of Representatives District 18		Representative	Strinden	Marie	Grand Forks	ND	1	1	
Grand Forks AFB, ND	North Dakota Aerial Agricultural Association		Executive Director	Schreiber-Beck	Cindy	Wahpeton	ND	1	1	
Grand Forks AFB, ND	North Dakota Aviation Council		Chairman	Pittman	Darrel	Bismarck	ND	1	1	
Grand Forks AFB, ND	North Dakota Aviation Mechanics Association		President	Brekken	Rod	Casselton	ND	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
Grand Forks AFB, ND	North Dakota Governor's Office		Governor	Dalrymple	Jack	Bismarck	ND	1	1	
Grand Forks AFB, ND	North Dakota Sports Aviation Association		Chairman	Teets	Trent	West Fargo	ND	1	1	
Grand Forks AFB, ND	North Dakota State Senate District 17		Senator	Holmberg	Ray	Grand Forks	ND	1	1	
Grand Forks AFB, ND	North Dakota State Senate District 18		Senator	Triplett	Constance	Grand Forks	ND	1	1	
Grand Forks AFB, ND	Polk County Board of County Commissioners		Commissioners			Crookston	MN	1	1	
Grand Forks AFB, ND	Small Business Administration			Giltner	Eric	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Army Corps of Engineers		North Dakota Regulatory Program Manager	Cimarosti	Dan	Bismarck	ND			1
Grand Forks AFB, ND	U.S. House of Representatives North Dakota		Congressman	Cramer	Kevin	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Heitkamp	Heidi	Grand Forks	ND	1	1	
Grand Forks AFB, ND	U.S. Senate North Dakota		Senator	Hoeven	John	Grand Forks	ND	1	1	
Grand Forks AFB, ND	University of North Dakota			Concannon	Bob	GFAFB	ND	1	1	
Grand Forks AFB, ND	University of North Dakota			Palmer	Al	Grand Forks	ND			1
Grand Forks AFB, ND				Gebhardt	Larry	Thompson	ND	1		
Grand Forks AFB, ND				Morley	Meg	Grand Forks	ND	1		
Grand Forks AFB, ND			Mr. and Mrs.	Kochevar	Ron and Kathy	Grand Forks	ND	1		

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	Central Library					Wichita	KS			1
McConnell AFB, KS	FAA, Central Region		Regional Administrator	Miniace	Joe	Kansas City	MO			1
McConnell AFB, KS	Iowa Tribe of Kansas and Nebraska		Chairman	Rhodd	Timothy	White Cloud	KS			1
McConnell AFB, KS	Iowa Tribe of Kansas and Nebraska	THPO		Fee	F. Martin	White Cloud	KS			1
McConnell AFB, KS	Kansas Department of Health and Environment		Director, Division of Environment	Mitchell	John	Topeka	KS			1
McConnell AFB, KS	Kansas Department of Transportation		Secretary of Transportation	King	Mike	Topeka	KS			1
McConnell AFB, KS	McConnell AFB Library					McConnell AFB	KS			1
McConnell AFB, KS	National Institute for Aviation Research			Schwasinger	Richard	Wichita	KS			1
McConnell AFB, KS	Roberts & Roberts Properties			Roberts	John	Goddard	KS			1
McConnell AFB, KS	Sac & Fox Nation of Missouri in Kansas and Nebraska		Chairperson	Barton	Twen	Reserve	KS			1
McConnell AFB, KS	Sac & Fox Nation of Missouri in Kansas and Nebraska	THPO	Council Secretary	Green	Edmore	Reserve	KS			1
McConnell AFB, KS	State Historic Preservation Office		Executive Director	Chinn	Jennie	Topeka	KS			1
McConnell AFB, KS	State Representative, District #81			Howell	Jim	Derby	KS			1
McConnell AFB, KS	Topeka & Shawnee County Public Library					Topeka	KS			1
McConnell AFB, KS	U.S. Forest Service, Rocky Mountain Region					Golden	CO			1

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	USEPA Region VII		Environmental Review Coordinator	Cothorn	Joe	Kansas City	KS			1
McConnell AFB, KS	USFWS Kansas Dept. of Wildlife, Parks & Tourism					Pratt	KS			1
McConnell AFB, KS	USFWS, Office of the Director		Regional Director	Walsh	Noreen	Lakewood	CO			1
McConnell AFB, KS	Wichita Independent Business Association			Joachims	Suellen	Andover	KS			1
McConnell AFB, KS				Alford	Robert	Wichita	KS			1
McConnell AFB, KS				Heiman	Tom	Bel Air	KS			1
McConnell AFB, KS				Hitchcock	David	Wichita	KS			1
McConnell AFB, KS				LaFarelle Hunt	Margarita	Wichita	KS			1
McConnell AFB, KS				Pottorff	Joann	Wichita	KS			1
McConnell AFB, KS				Shifflett	Dana	Newton	KS			1
McConnell AFB, KS				Wolf	Ronad L	Haysville	KS			1
McConnell AFB, KS	Beechcraft			Houk	Jeffery	Derby	KS	1		
McConnell AFB, KS	Best Value Services			Tafesse	Solomon	Wichita	KS	1		
McConnell AFB, KS	Botanica		Executive Director	Miller	Marty	Wichita	KS	1		
McConnell AFB, KS	City of Derby		City Engineer	Squires	Dan	Derby	KS	1	1	
McConnell AFB, KS	City of Derby Economic Development		Director	Moeding	Allison	Derby	KS	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	City of Derby Mayor's Office		Mayor	Avello	Dion	Derby	KS	1	1	
McConnell AFB, KS	City of Derby Planning Department		City Planner	Bird	Cody	Derby	KS	1	1	
McConnell AFB, KS	City of Topeka Mayor's Office		Mayor	Bunten	William	Topeka	KS	1	1	
McConnell AFB, KS	City of Topeka Planning Department		Director	Fiander	Bill	Topeka	KS	1	1	
McConnell AFB, KS	City of Wichita Mayor's Office		Mayor	Brewer	Carl	Wichita	KS	1	1	
McConnell AFB, KS	City of Wichita Office of Environmental Health		Interim Environmental Health Manager	Maloney	Shawn	Wichita	KS	1	1	
McConnell AFB, KS	Derby City Council			Downing	Darrell	Derby	KS	1	1	
McConnell AFB, KS	Derby City Council			Warren	Chuck	Derby	KS	1	1	
McConnell AFB, KS	Friends University			Honts	Arlen	Wichita	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 103		Representative	Victors	Ponka-We	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 47		Representative	Gonzalez	Ramon	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 53		Representative	Tietze	Annie	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 56		Representative	Weigel	Virgil	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 57		Representative	Alcala	John	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 58		Representative	Lane	Harold	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 84		Representative	Finney	Gail	Topeka	KS	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	House Representatives Kansas District 86		Representative	Ward	Jim	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 92		Representative	Dillmore	Nile	Topeka	KS	1	1	
McConnell AFB, KS	House Representatives Kansas District 95		Representative	Sawyer	Tom	Topeka	KS	1	1	
McConnell AFB, KS	Kansas Economic Progress Council			Koch	Bernie	Topeka	KS			
McConnell AFB, KS	Kansas Governor's Office		Governor	Brownback	Sam	Topeka	KS	1	1	
McConnell AFB, KS	Metropolitan Topeka Airport Authority					Topeka	KS	1	1	
McConnell AFB, KS	Sedgewick County		County Clerk	Arnold	Kelly	Wichita	KS	1	1	
McConnell AFB, KS	Sedgwick County Community Development			Zukovich	Kristi	Wichita	KS	1	1	
McConnell AFB, KS	Sedgwick County Manager's Office			Buchanan	Bill	Wichita	KS	1	1	
McConnell AFB, KS	Shawnee County		County Clerk	Beck	Cyndi	Topeka	KS	1	1	
McConnell AFB, KS	Shawnee County Planning Department					Topeka	KS	1	1	
McConnell AFB, KS	Spirit			Holup	Joan	Wichita	KS	1		
McConnell AFB, KS	State Senate - Kansas District 16		Senator	Masterson	Ty	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 18		Senator	Kelly	Laura	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 20		Senator	Schmidt	Vicki	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 25		Senator	O'Donnell	Michael	Topeka	KS	1	1	

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS	State Senate - Kansas District 26		Senator	Kerschen	Dan	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 27		Senator	Donovan	Les	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 28		Senator	Peterson	Mike	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 29		Senator	Faust-Goudeau	Oletha	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 30		Senator	Wagle	Susan	Topeka	KS	1	1	
McConnell AFB, KS	State Senate - Kansas District 31		Senator	McGinn	Carolyn	Topeka	KS	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congressman	Pompeo	Mike	Washington	DC	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congressman	Pompeo	Mike	Wichita	KS	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congresswoman	Jenkins	Lynn	Washington	DC	1	1	
McConnell AFB, KS	U.S. House of Representatives		Congresswoman	Jenkins	Lynn	Topeka	KS	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Moran	Jerry	Wichita	KS	1	1	
McConnell AFB, KS	U.S. Senate Kansas		Senator	Roberts	Pat	Wichita	KS	1	1	
McConnell AFB, KS	Wichita Airport Authority		Director of Airports	White	Victor D.	Wichita	KS	1	1	
McConnell AFB, KS	Wichita Art Museum		Chief Financial Officer	Harper	Jan	Wichita	KS	1		
McConnell AFB, KS	Wichita Sedgwick County		Director of Planning	Schlegel	John	Wichita	KS	1	1	
McConnell AFB, KS	Wichita-Sedgwick County Planning Department					Wichita	KS	1	1	
McConnell AFB, KS				Dahl	Dave	Wichita	KS	1		

**KC-46A FTU AND MOB 1 BEDDOWN FINAL MAILING LIST (Continued)**

Base	Name of Business, Organization, or Agency	Name of Business or Company	Title/Position	Last Name	First Name	City	State	FINAL EIS		
								CD	Printed Exec Sum	Printed Hard Copy
McConnell AFB, KS				Foster	Judy	Wichita	KS	1		
McConnell AFB, KS				Foster	Tom	Wichita	KS	1		
McConnell AFB, KS				Mackey	Alan	Wichita	KS	1		
McConnell AFB, KS	Kansas Department of Wildlife, Parks, and Tourism		Ecological Services Section			Wichita	KS			1
McConnell AFB, KS				Alexander	Diana	Wichita	KS	1		
McConnell AFB, KS				Chapell	Frank	Wichita	KS	1		
McConnell AFB, KS				Cole	Gregory	Wichita	KS	1		
McConnell AFB, KS				Fish	Dave	Wichita	KS	1		
McConnell AFB, KS				Fox	Vaughn	Wichita	KS	1		
McConnell AFB, KS				Hoch	Keith	Wichita	KS	1		
McConnell AFB, KS				Ingle	Elena	Wichita	KS	1		
McConnell AFB, KS				Measels	Tim	Wichita	KS	1		
McConnell AFB, KS				Parsons	Nick	Wichita	KS	1		
McConnell AFB, KS				Sargent	Bruce & Charlotte	Wichita	KS	1		
McConnell AFB, KS				Weiniger	Patty	Wichita	KS	1		
McConnell AFB, KS				Yoder	Donald & Janet	Wichita	KS	1		

# APPENDIX B

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## DEFINITION OF RESOURCE AND METHODOLOGY FOR ANALYSIS





## **APPENDIX B DEFINITION OF RESOURCE AND METHODOLOGY FOR ANALYSIS**

This appendix directly corresponds to the environmental resource areas described in Volume I, Chapter 3, as the baseline conditions, and the analysis of consequences, as described in Volume I, Chapter 4, for each of the four bases under consideration. The environmental resource areas are ordered according to the order in Volume I, Chapters 3 and 4. For each environmental resource area, this appendix provides a definition of the resource, the regulatory setting, if applicable, and a description of the methodology used to evaluate the environmental resource area.

Because the same resource areas were analyzed for each of the four bases, the definition, regulatory setting, and methodology are the same for all four bases. The analysis methodology addresses both the context of the environmental resource and the intensity of potential consequences to the resource resulting from implementation of the KC-46A missions.

### **B.1 NOISE**

#### **B.1.1 RESOURCE DEFINITION**

Sound is tiny vibrations in a medium such as air or water that are detected by the ear. Noise is specifically unwanted sound or, alternatively, a lack of ‘peace and quiet.’ There is a wide variety of types of noises. Reactions to noises depend not only on the qualities of the noise (e.g., intensity, pitch, duration, or time of day) but also on the characteristics of the listener (e.g., sensitivity of the individual and attitude toward the noise source) and the activity in which the listener is engaged at the time the noise occurs.

#### **B.1.2 REGULATORY SETTING**

Since legal limits on allowable noise levels could, in some cases, reduce the combat effectiveness of military equipment, military equipment has been exempted from regulations that impose noise limitations. However, several policies and regulations are in place to limit the effects of military noise.

The U.S. Air Force (USAF) recognizes that noise-sensitive land uses are not compatible with elevated aircraft noise levels and has implemented the Air Installation Compatible Use Zone (AICUZ) program, as described in Air Force Instruction (AFI) 32-7063 and Department of Defense Instruction (DoDI) 4165.57, to minimize incompatible land use. In 1992, the Federal Interagency Committee on Noise (FICON) established a set of guidelines detailing which land uses are compatible at which noise levels; these guidelines have been adopted as part of the AICUZ program.

In June 1980, an ad hoc Federal Interagency Committee on Urban Noise (FICUN) published guidelines (FICUN 1980) relating day-night average sound level (DNL) to compatible land uses. The FICUN guidelines consider areas with noise levels of 75 decibels (dB) DNL or greater as unacceptable living environments. Areas between 65–74 dB DNL are considered “generally unacceptable” for noise-sensitive land uses such as residences, schools, hospitals, and public services. Houses located in areas between 65–74 dB DNL may not qualify for Federal mortgage insurance without additional costs associated with installing noise attenuation. In the outdoor noise environment, levels greater than 65 dB DNL may be annoying to some people during communications. Generally, residential development is not recommended in areas experiencing noise levels of 65 A-weighted decibels (dBA) or greater. Although discouraged, residential development is compatible within the 65–69 dBA and 70–74 dBA contours, provided noise

reduction levels of 25 dB and 30 dB, respectively, are achieved. Commercial/retail businesses are compatible without restrictions up to 69 dBA, and up to 79 dBA, provided that noise reduction levels of 25 dB and 30 dB, respectively, are achieved for public areas. Industrial/manufacturing, transportation, and utility companies have a high noise level compatibility, and, therefore, can be located within the higher noise zones. Additional discussion of the relationship between land use and noise can be found in Volume I, Chapter 3, Sections 3.1.7, 3.2.7, 3.3.7, and 3.4.7, which are the land use sections for each of the four bases.

On-base noise exposure to workers may exceed 80 dB DNL. Workers in known high noise exposure locations may be required to wear hearing protection devices including, but not limited to, earplugs and earmuffs. The hearing conservation programs at each base are conducted in accordance with Air Force Occupational Safety and Health Standard 48-20, "Occupational Noise and Hearing Conservation Program," DoDI 6055.12, "DoD Hearing Conservation Program," and Title 29 of the *Code of Federal Regulations* (CFR) Section 1910.95, "Occupational Noise Exposure." The Bioenvironmental Engineering Office administers the Hearing Conservation Program at each of the candidate bases. Representatives from the Bioenvironmental Engineering Office visit facilities in which workers could potentially be exposed to noise levels exceeding noise exposure thresholds. A health risk assessment is conducted involving dosimeter testing of a representative sample of employees. An audiometric monitoring program is initiated if noise exposure exceeds established thresholds.

Per U.S. Department of Defense (DoD) policy, the 80 dB DNL noise contour is used to identify populations most at risk of potential hearing loss (USD 2009). If no residence or populated area is within the 80 dB DNL contour, then no further risk assessment is warranted. No residences or populated areas are within the 80 dB DNL noise contours for any of the four candidate locations. Therefore, Potential Hearing Loss risk assessment was not warranted.

### **B.1.3 METHODOLOGY**

#### **B.1.3.1 Base Vicinity**

Noise levels in the vicinity of the Formal Training Unit (FTU) and First Main Operating Base (MOB 1) bases were modeled using NOISEMAP Version 7.2. In accordance with current USAF policy, NOISEMAP runs were conducted using the topographic effects module. This module accounts for the effects of local terrain and ground surface type on the propagation of sound.

The areas exposed to elevated noise levels are shown using DNL noise contours at 5 dB increments from 65 dB to 85 dB. Elevated DNL implies that overflight noise is particularly frequent and intense. In general, noise levels are highest on and near the airfield itself and decrease with distance from the airfield. However, in a few instances, the overlapping of two or more flight paths generates a geographically separated area in which noise exceeds 65 DNL. These instances appear as small noise contour polygons separated from the larger noise contour set.

The number of off-base persons exposed to noise level increments was estimated using 2010 U.S. Census data. Noise contours were overlaid on census blocks to determine the fraction of each census block that lies within each noise level increment. Census block population was apportioned to inside or outside of the noise level increment based on the fraction of the census block affected. This method assumes even distribution of population with the census block. The U.S. Census counts permanent residents; non-permanent residents are not counted using this method.

### B.1.3.2 Auxiliary Airfields

Aircrews associated with the KC-46A FTU scenario would make use of auxiliary airfields to provide aircrews with varied training experiences. The auxiliary airfields proposed for regular use by the KC-46A FTU are heavily used under baseline conditions. At each auxiliary airfield proposed for use, the current level of operations was compared against proposed additional operations to determine potential DNL increase.

KC-46A operations at auxiliary airfields would be expected to use the same procedures being used by other aircraft at the airfields currently. The KC-46A would be expected to overfly the same ground areas, use the same pattern altitudes, and conform to the same runway usage patterns as current operations. To ensure that the noise level increase threshold of 0.5 dB DNL would not be exceeded as a result of temporary or longer-term increases in KC-46A operations tempo, a mission evolution factor was applied. The mission evolution factor chosen was 150 percent of proposed averaged KC-46A operations. In calculation of the DNL metric, noise events occurring between 10:00 P.M. and 7:00 A.M. are assessed a 10 dB penalty. As a result, an aircraft operation occurring between 10:00 P.M. and 7:00 A.M. has the same effect on cumulative DNL as 10 of the same operations occurring during other time periods. The KC-46A would not be expected to conduct operations at auxiliary airfields between 10:00 P.M. and 7:00 A.M.

Each aircraft type operating at the auxiliary airfields was categorized as being either “as loud or louder than a KC-46A” or “less loud than a KC-46A” based on comparison of noise level at a 1,000-foot distance and a standard aircraft configuration type. In calculation of potential DNL change, all aircraft classified as “loud or louder” than a KC-46A were treated as if they were exactly as loud as a KC-46A and aircraft “less loud than a KC-46A” were disregarded. This approach generates conservative results. The potential DNL increase was calculated using the formula below, and results are shown in Table B-1.

$$\text{DNL}_{\text{increase}} = 10 \text{ LOG } (N_{\text{day KC46}} + [10 * N_{\text{night KC46}}]) - 10 \text{ LOG } (N_{\text{day existing}} + [10 * N_{\text{night existing}}])$$

**Table B-1. Calculation of Potential DNL Increase**

Base	Proposed KC-46A <sup>a</sup>		Existing			Conclusion	
	Annual Airfield Operations	Annual Operations After Mission Evolution Factor	Existing Annual Operations	Percent Existing Operations as Loud or Louder than KC-46	Percent 2200-0700 (Aircraft Types as Loud or Louder)	DNL Change Not Expected to Be Exceeded	Requires Further Analysis (Yes/No [Y/N])
<b>Altus AFB FTU Scenario Auxiliary Airfields</b>							
AMA	517	776	54,115	31%	3%	0.15	N
CSM	3,681	5,522	28,485	92%	3%	0.66	Y
AFW	2,170	3,255	100,756	12%	15%	0.45	N
LBB	148	222	67,919	25%	4%	0.04	N
<b>McConnell AFB FTU Scenario Auxiliary Airfields</b>							
CSM	977	1,466	28,485	92%	3%	0.18	N
FOE	977	1,466	24,742	73%	11%	0.18	N
ITC	4,561	6,842	165,035	34%	11%	0.26	N

<sup>a</sup> No KC-46A operations would be conducted at night (10:00 P.M. to 7:00 A.M.).

**Key:** AMA= Rick Husband Amarillo International Airport; AFW= Fort Worth Alliance Airport; CSM= Clinton-Sherman Industrial Airpark; FOE= Forbes Field; ICT= Wichita Mid-Continental Airport; LBB=Lubbock Preston Smith International Airport

As shown in the Table B-1, the potential DNL increase would exceed 0.5 dB only at Clinton-Sherman Industrial Airpark (CSM) under the Altus Air Force Base (AFB) FTU scenario. Increases of less than 0.5 dB would not be expected to be noticed by people near the airfield, and noise impacts would be minimal. No further noise analysis was conducted at these locations.

## B.2 AIR QUALITY

### B.2.1 RESOURCE DEFINITION

Air quality in a given location is defined by the size and topography of the air basin, the local and regional meteorological influences, and the types and concentrations of pollutants in the atmosphere. The significance of a pollutant concentration often is determined by comparing its concentration to an appropriate national or state ambient air quality standard. These standards represent the allowable atmospheric concentrations at which the public health and welfare are protected and include a reasonable margin of safety to protect the more sensitive individuals in the population. The U.S. Environmental Protection Agency (USEPA) established the National Ambient Air Quality Standards (NAAQS) to regulate the following criteria pollutants: ozone (O<sub>3</sub>), carbon monoxide (CO), nitrogen dioxide (NO<sub>2</sub>), sulfur dioxide (SO<sub>2</sub>), particulate matter less than or equal to 10 microns in diameter (PM<sub>10</sub>), particulate matter less than or equal to 2.5 microns in diameter (PM<sub>2.5</sub>), and lead. The NAAQS generally may not be exceeded more than once per year, except for annual standards, which may never be exceeded. Units of concentration for these standards generally are expressed in parts per million (ppm) or micrograms per cubic meter (µg/m<sup>3</sup>). Table B-2 presents the NAAQS.

**Table B-2. National Ambient Air Quality Standards**

Pollutant	Averaging Time	National Standards	
		Primary <sup>a, b</sup>	Secondary <sup>a, c</sup>
Ozone	8-hour	0.075 ppm (147 µg/m <sup>3</sup> )	Same as primary
Carbon monoxide	8-hour	9 ppm (10 mg/m <sup>3</sup> )	—
	1-hour	35 ppm (40 mg/m <sup>3</sup> )	—
Nitrogen dioxide	Annual	0.053 ppm (100 µg/m <sup>3</sup> )	Same as primary
	1-hour	0.10 ppm (188 µg/m <sup>3</sup> )	—
Sulfur dioxide	3-hour	—	0.5 ppm (1,300 µg/m <sup>3</sup> )
	1-hour	0.075 ppm (105 µg/m <sup>3</sup> )	—
PM <sub>10</sub>	24-hour	150 µg/m <sup>3</sup>	Same as primary
PM <sub>2.5</sub>	Annual	12 µg/m <sup>3</sup>	15 µg/m <sup>3</sup>
	24-hour	35 µg/m <sup>3</sup>	35 µg/m <sup>3</sup>
Lead	Rolling 3-month period	0.15 µg/m <sup>3</sup>	Same as primary

<sup>a</sup> Concentrations are expressed first in units in which they were promulgated. Equivalent units given in parenthesis.

<sup>b</sup> Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

<sup>c</sup> Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

The NAAQS 8-hour O<sub>3</sub> standard is attained when the measured average of the annual fourth-highest daily maximum 8-hour average concentration is less than or equal to 0.075 ppm. For CO and PM<sub>10</sub>, the NAAQS are not to be exceeded more than once per year. The NAAQS annual NO<sub>2</sub> standard is attained when the annual arithmetic mean concentration in a calendar year is less than or equal to 0.053 ppm. The 1-hour NO<sub>2</sub> standard is attained when the 3-year average of the 98th percentile of the daily maximum 1-hour average concentration does not exceed 0.10 ppm. For SO<sub>2</sub>, the primary NAAQS is attained if the 1-hour concentration is less than or equal to 0.075 µg/m<sup>3</sup>. The NAAQS PM<sub>2.5</sub> standards are attained when the annual arithmetic mean concentration is less than or equal to 12 µg/m<sup>3</sup> and when the 98th percentile of 24-hour concentration is less than or equal to 65 µg/m<sup>3</sup>.

O<sub>3</sub> concentrations are the highest during the warmer months of the year and coincide with the period of maximum insolation. Maximum O<sub>3</sub> concentrations tend to be homogeneously spread throughout a region, as it often takes several hours to convert precursor emissions to O<sub>3</sub> (mainly nitrogen oxides [NO<sub>x</sub>] and photochemically reactive volatile organic compounds [VOCs]) in the atmosphere. Inert pollutants, such as CO, tend to have the highest concentrations during the colder months of the year, when light winds and nighttime/early morning surface-based temperature inversions inhibit atmospheric dispersion. Maximum inert pollutant concentrations are usually found near an emission source.

#### **B.2.1.1 Greenhouse Gases**

Greenhouse gases (GHGs) are gases that trap heat in the atmosphere. These emissions are generated by both natural processes and human activities. The accumulation of GHGs in the atmosphere regulates the earth's temperature. The U.S. Global Change Research Program report, *Global Climate Change Impacts in the United States*, states the following:

- Observations show that warming of the climate is unequivocal. The global warming observed over the past 50 years is due primarily to human-induced emissions of heat-trapping gases. These emissions come mainly from the burning of fossil fuels (coal, oil, and gas), with important contributions from the clearing of forests, agricultural practices, and other activities.
- Warming over this century is projected to be considerably greater than over the last century. The global average temperature since 1900 has risen by about 1.5 degrees Fahrenheit (°F). By 2100, it is projected to rise another 2 °F to 11.5 °F. The U.S. average temperature has risen by a comparable amount and is very likely to rise more than the global average over this century, with some variation from place to place. Several factors will determine future temperature increases. Increases at the lower end of this range are more likely if global heat-trapping gas emissions are cut substantially. If emissions continue to rise at or near current rates, temperature increases are more likely to be near the upper end of the range. Volcanic eruptions or other natural variations could temporarily counteract some of the human-induced warming, slowing the rise in global temperature, but these effects would only last a few years.
- Reducing emissions of carbon dioxide (CO<sub>2</sub>) would lessen warming over this century and beyond. Sizable early cuts in emissions would significantly reduce the pace and the overall amount of climate change. Earlier cuts in emissions would have a greater effect in reducing climate change than comparable reductions made later. In addition, reducing emissions of some shorter-lived heat-trapping gases, such as methane (CH<sub>4</sub>), and some types of particles, such as soot, would begin to reduce warming within weeks to decades.

- Climate-related changes have already been observed globally and in the United States. These include increases in air and water temperatures, reduced frost days, increased frequency and intensity of heavy downpours, a rise in sea level, and reduced snow cover, glaciers, permafrost, and sea ice. A longer ice-free period on lakes and rivers, lengthening of the growing season, and increased water vapor in the atmosphere have also been observed. Over the past 30 years, temperatures have risen faster in winter than in any other season, with average winter temperatures in the Midwest and northern Great Plains increasing more than 7 °F. Some of the changes have been faster than previous assessments had suggested.
- These climate-related changes are expected to continue while new ones develop. Likely future changes for the United States and surrounding coastal waters include more intense hurricanes with related increases in wind, rain, and storm surges (but not necessarily an increase in the number of these storms that make landfall), as well as drier conditions in the Southwest and Caribbean. These changes will affect human health, water supply, agriculture, coastal areas, and many other aspects of society and the natural environment. (USGCRP 2009).

GHGs include water vapor, CO<sub>2</sub>, CH<sub>4</sub>, nitrous oxide, O<sub>3</sub>, and several hydrocarbons and chlorofluorocarbons. Each GHG has an estimated global warming potential (GWP), which is a function of its atmospheric lifetime and its ability to absorb and radiate infrared energy emitted from the earth's surface relative to CO<sub>2</sub>. The GWP of CO<sub>2</sub> is 1, and is, therefore, the standard by which all other GHGs are measured. GHGs are often reported as carbon dioxide equivalent (CO<sub>2e</sub>), which is used to express emissions of GHG relative to emissions of CO<sub>2</sub>.

The potential effects of GHG emissions from the project scenarios are by nature global. Given the global nature of climate change and the current state of the science, it is not useful at this time to attempt to link the emissions quantified for local actions to any specific climatological change or resulting environmental impact. Nonetheless, the GHG emissions from the project scenarios have been quantified to the extent feasible in this Final Environmental Impact Statement (EIS) for information and comparison purposes.

### **B.2.1.2 Ozone Depleting Substances**

The 1987 Montreal Protocol on Substances that Deplete the Ozone Layer prohibited production of all Class I ozone depleting substances (ODSs) in signatory countries by 1996. The Clean Air Act (CAA) amendments of 1990 govern the consumption, transportation, use, and disposal of ODSs. Section 326 of the fiscal year 1993 National Defense Authorization Act requires Senior Acquisition Official approval for contracts requiring use of ODSs. The KC-46A will be the first Air Mobility Command (AMC) aircraft to be completely free of ODSs. The USAF-approved halon alternative is HSC-125. Handheld extinguishers used in the KC-46A also will be ODS-free, whereas commercial aircraft use ODS for all fire suppression systems.

### **B.2.2 REGULATORY SETTING**

The CAA and its subsequent amendments establish air quality regulations and the NAAQS and delegate the enforcement of these standards to the states. The CAA establishes air quality planning processes and requires areas in nonattainment of an NAAQS to develop a State Implementation Plan (SIP) that details how the state will attain the standard within mandated timeframes. The requirements and compliance dates for attainment are based on the severity of the nonattainment classification of the area. The following summarizes the air quality rules and regulations that apply to the project scenarios.

### **B.2.2.1 Federal Regulations**

CAA Section 176(c) and USEPA's General Conformity implementing regulation generally prohibit federal agencies from engaging in, supporting, permitting, or approving any activity that does not conform to the most recent USEPA-approved SIP in nonattainment or maintenance areas. This means that federal projects in such areas or other activities using federal funds or requiring federal approval (1) will not cause or contribute to any new violation of an NAAQS; (2) will not increase the frequency or severity of any existing violation; or (3) will not delay the timely attainment of any standard, interim emission reduction, or other milestone. CAA Section 176(c) (42 U.S. Code [USC] 7506(c)) and 40 CFR Part 93, Subpart B, implement the USEPA General Conformity Rule.

The General Conformity Rule applies to Federal actions affecting areas that are in nonattainment of an NAAQS and to designated maintenance areas (attainment areas that have been reclassified from a previous nonattainment status and are required to prepare an air quality maintenance plan). Conformity requirements only apply to nonattainment and maintenance pollutants and their precursor emissions. Conformity determinations are required when the annual direct and indirect emissions from a proposed Federal action equal or exceed an applicable *de minimis* threshold. These thresholds vary by pollutant and the severity of nonattainment conditions in the region affected by the proposed action. The General Conformity Rule applies to proposed KC-46A operations within the following project regions: (1) for actions proposed at Altus AFB, the serious O<sub>3</sub> nonattainment area that encompasses the Fort Worth Alliance Airport (AFW) auxiliary airfield and (2) for actions proposed at Fairchild AFB, the Spokane CO and PM<sub>10</sub> maintenance areas, about 4 miles east of the eastern portion of Fairchild AFB. Proposed KC-46A operations within these areas would conform to the applicable SIP if their annual emissions remain below (1) 50 tons per year of VOCs or NO<sub>x</sub> for the AFW auxiliary airfield and (2) 100 tons per year of CO and PM<sub>10</sub> for the Spokane area.

Under the CAA, state and local agencies may establish air quality standards and regulations of their own, provided these are at least as stringent as the Federal requirements. These state and local standards and regulations are described in the affected environment sections for each base in Volume I, Chapter 3 (see Sections 3.1.2, 3.2.2, 3.3.2, and 3.4.2). In addition, Table B-3 presents state ambient air quality standards promulgated by the Washington Department of Ecology and North Dakota Department of Health.

### **B.2.2.2 Greenhouse Gases**

The USEPA has promulgated several final regulations involving GHGs either under the authority of the CAA, or as directed by Congress, but none of them apply directly to the project scenarios. On 18 February 2010, the Council on Environmental Quality (CEQ) released its *Draft NEPA Guidance on Consideration of the Effects of Climate Change and Greenhouse Gas Emissions* (CEQ 2010), which suggests that proposed actions that would be reasonably anticipated to emit 25,000 metric tons or more per year CO<sub>2e</sub> should be evaluated by quantitative and qualitative assessments. This is not a threshold of significance, but rather an indicator that a quantitative and qualitative assessment should be included in the NEPA documentation. The purpose of quantitative analysis of CO<sub>2e</sub> emissions in this Final EIS is for its potential usefulness in making reasoned choices among scenarios.

**Table B-3. Washington and North Dakota Ambient Air Quality Standards**

Pollutant	Averaging Time	State Standards	
		Washington	North Dakota
Ozone	8-hour		0.075 ppm (147 µg/m <sup>3</sup> )
	1-hour	0.12 ppm (235 µg/m <sup>3</sup> )	
Carbon monoxide	8-hour	9 ppm (10 mg/m <sup>3</sup> )	9 ppm (10 mg/m <sup>3</sup> )
	1-hour	35 ppm (40 mg/m <sup>3</sup> )	35 ppm (40 mg/m <sup>3</sup> )
Nitrogen dioxide	Annual	0.05 ppm (100 µg/m <sup>3</sup> )	0.05 ppm (100 µg/m <sup>3</sup> )
	1-hour		0.10 ppm (188 µg/m <sup>3</sup> )
Sulfur dioxide	Annual	0.02 ppm	
	24-hour	0.10 ppm	
	3-hour		0.5 ppm (1,300 µg/m <sup>3</sup> )
	1-hour	0.40 ppm <sup>a</sup>	
	1-hour	0.25 ppm <sup>b</sup>	0.075 ppm (196 µg/m <sup>3</sup> )
PM <sub>10</sub>	Annual	50 µg/m <sup>3</sup>	
	24-hour	150 µg/m <sup>3</sup>	150 µg/m <sup>3</sup>
PM <sub>2.5</sub>	Annual		15 µg/m <sup>3</sup>
	24-hour		35 µg/m <sup>3</sup>
Total Suspended Particulates	Annual	60 µg/m <sup>3</sup>	
	24-hour	150 µg/m <sup>3</sup>	
	Annual <sup>c</sup>	0.02 ppm 28 µg/m <sup>3</sup>	
	24-hour	0.1 ppm 140 µg/m <sup>3</sup>	
	1-hour <sup>d</sup>	0.2 ppm 280 µg/m <sup>3</sup>	
	Instantaneous	10 ppm (14 mg/m <sup>3</sup> )	

<sup>a</sup> Not to be above this level more than once in a calendar year.<sup>b</sup> Not to be above this level more than twice in a consecutive 7-day period.<sup>c</sup> Maximum arithmetic mean concentration averaged over 3 consecutive months.<sup>d</sup> Not to be exceeded more than once per month.

### B.2.3 METHODOLOGY

The air quality analysis estimated the magnitude of emissions that would occur from proposed KC-46A construction and operational activities at each proposed base location. Depending on the project scenario, the estimation of proposed operational impacts is based on (1) the net increase in emissions due to the addition of KC-46A aircraft or (2) the net change in emissions due to the replacement of existing KC-135 operations with operations from the beddown of KC-46A aircraft.

Potential impacts on air quality are evaluated with respect to the extent, context, and intensity of the impact in relation to relevant regulations, guidelines, and scientific documentation. The CEQ defines significance in terms of context and intensity in 40 CFR Section 1508.27. This requires that the significance of an action must be analyzed in respect to the setting of the action and based relative to the severity of the impact. The CEQ NEPA regulations (40 CFR 1508.27(b)) provide 10 key factors to consider in determining the intensity of an impact.

In the case of criteria pollutants for which the project region is in attainment of an NAAQS, the analysis compared the net increase in annual air pollutant emissions estimated for each project scenario to the USEPA Prevention of Significant Deterioration (PSD) threshold for new major sources of 250 tons per year of a pollutant as an indicator of significance or non-significance of projected air quality impacts. In the case of criteria pollutants for which the project region does not attain an NAAQS, the analysis compared the net increase in proposed annual emissions to the applicable pollutant threshold that requires a conformity determination for that region.

If proposed emissions exceed a PSD or conformity threshold, further analysis was conducted to determine whether impacts were significant. In such cases, if proposed emissions (1) do not contribute to an exceedance of an ambient air quality standard or (2) conform to the approved SIP, then impacts would be less than significant.

### **B.2.3.1 Construction**

The KC-46A project scenarios at each proposed basing location would require construction and/or renovation of airfield facilities, including training facilities, hangars, taxiways, and maintenance and fueling facilities. Air quality impacts due to proposed construction activities would occur from (1) combustive emissions due to the use of fossil fuel-powered equipment and (2) fugitive dust emissions ( $PM_{10}/PM_{2.5}$ ) due to the operation of equipment on exposed soil. Construction activity data were developed to estimate proposed construction equipment usages and associated combustive and fugitive dust emissions for each project scenario.

Factors needed to derive construction source emission rates were obtained from the *Compilation of Air Pollutant Emission Factors*, AP-42, Volume I (USEPA 1995); the USEPA NONROAD2008a model for nonroad construction equipment (USEPA 2009); and the USEPA MOVES2010b model for on-road vehicles (USEPA 2013).

Inclusion of standard construction practices and Leadership in Energy and Environmental Design (LEED) Silver certification into proposed construction activities would potentially reduce fugitive dust emissions generated from the use of construction equipment on exposed soil by 50 percent from uncontrolled levels. The standard construction practices for fugitive dust control include the following:

1. Use water trucks to keep areas of vehicle movement damp enough to minimize the generation of fugitive dust.
2. Minimize the amount of disturbed ground area at a given time.
3. Suspend all soil disturbance activities when winds exceed 25 miles per hour or when visible dust plumes emanate from the site and stabilize all disturbed areas with water application.
4. Designate personnel to monitor the dust control program and to increase watering, as necessary, to minimize the generation of dust.

### **B.2.3.2 Operations**

Sources associated with operation of the proposed KC-46A scenarios at each basing location would include (1) operations and engine maintenance/testing of aircraft, (2) onsite privately owned vehicles (POVs) and government motor vehicles (GMVs), (3) offsite POV commutes, (4) aerospace ground equipment (AGE), (5) nonroad mobile equipment, (6) mobile fuel transfer operations, and (7) stationary and other sources. Operational data used to calculate projected KC-46A aircraft emissions were obtained from data used in the project noise analyses. Factors used to calculate combustive emissions for the KC-46A aircraft are based on emissions data developed by Pratt and Whitney for the PW4062 engine (ICAO 2013). The operational times in mode for the KC-46A engine are based on those for the KC-135 aircraft (Air Force Civil Engineer Center 2013).

Emissions from non-aircraft sources due to the proposed KC-46A scenarios at each basing location were estimated by the following methods:

1. Emissions from the usage of AGE by KC-46A aircraft at Altus AFB are based on AGE usages for existing C-17 and KC-135 aircraft at Altus AFB. Emissions from the usage of AGE by KC-46A aircraft at all other base locations are based on AGE usages for existing KC-135 aircraft at Fairchild AFB.
2. Emissions from POVs, GMVs, and stationary sources were estimated by multiplying existing emissions generated at each base for these sources by the ratio of total base employment populations associated with each proposed scenario and baseline conditions.
3. The emission estimations for AGE, POVs, GMVs, and nonroad equipment simulated the gradual turnover of these sources in the future to vehicle and equipment fleets with new and cleaner USEPA emission standards.
4. Emissions from mobile fuel transfer operations were estimated by multiplying existing emissions for this source at Altus AFB by the ratio of total base employment populations associated with each proposed scenario and baseline conditions at Altus AFB.

The air quality analysis uses calendar year 2012 to define existing emissions, as it includes the most recent calendar year of operational activities at each basing location.

The analysis of proposed aircraft operations is limited to operations that occur within the lowest 3,000 feet (914 meters) of the atmosphere, as this is the typical depth of the atmospheric mixing layer where the release of aircraft emissions would affect ground-level pollutant concentrations. In general, aircraft emissions released above the mixing layer would not appreciably affect ground-level air quality.

## **B.3 SAFETY**

### **B.3.1 RESOURCE DEFINITION**

Ground and flight safety involving aviation operations conducted by the USAF are addressed in this section. Because of the proposal to construct within portions of the airfield environment, the focus of this section is on safety-of-flight issues associated with airfield operations. Within the ground safety section, issues involving operations and maintenance (O&M) activities that support operation of the airfield are addressed. Also considered in this section is the safety of personnel and facilities on the ground that may be placed at risk from flight operations. Within the aircraft mishaps/flight safety section for each base, aircraft flight risks and safety issues associated with conducting aviation activities at the respective bases are addressed. Historic information on aircraft accidents for the

KC-135 at each base is also presented to give the reader perspective as to the frequency of major mishaps, which occurred during the lengthy service of the existing tanker aircraft.

KC-46A flight risks and safety issues associated with conducting aviation activities at the base and in the near-base airspace are addressed. Any KC-46A accidents at the airfield would have direct impacts on the ground in the immediate vicinity of the mishap as a result of explosion/fire and debris spread.

### **B.3.2 REGULATORY SETTING**

Numerous Federal, civil, and military laws and regulations govern operations at bases and in the surrounding airspace. Individually and collectively, they prescribe measures, processes, and procedures required to ensure safe operations and to protect the public, military, and property.

### **B.3.3 METHODOLOGY**

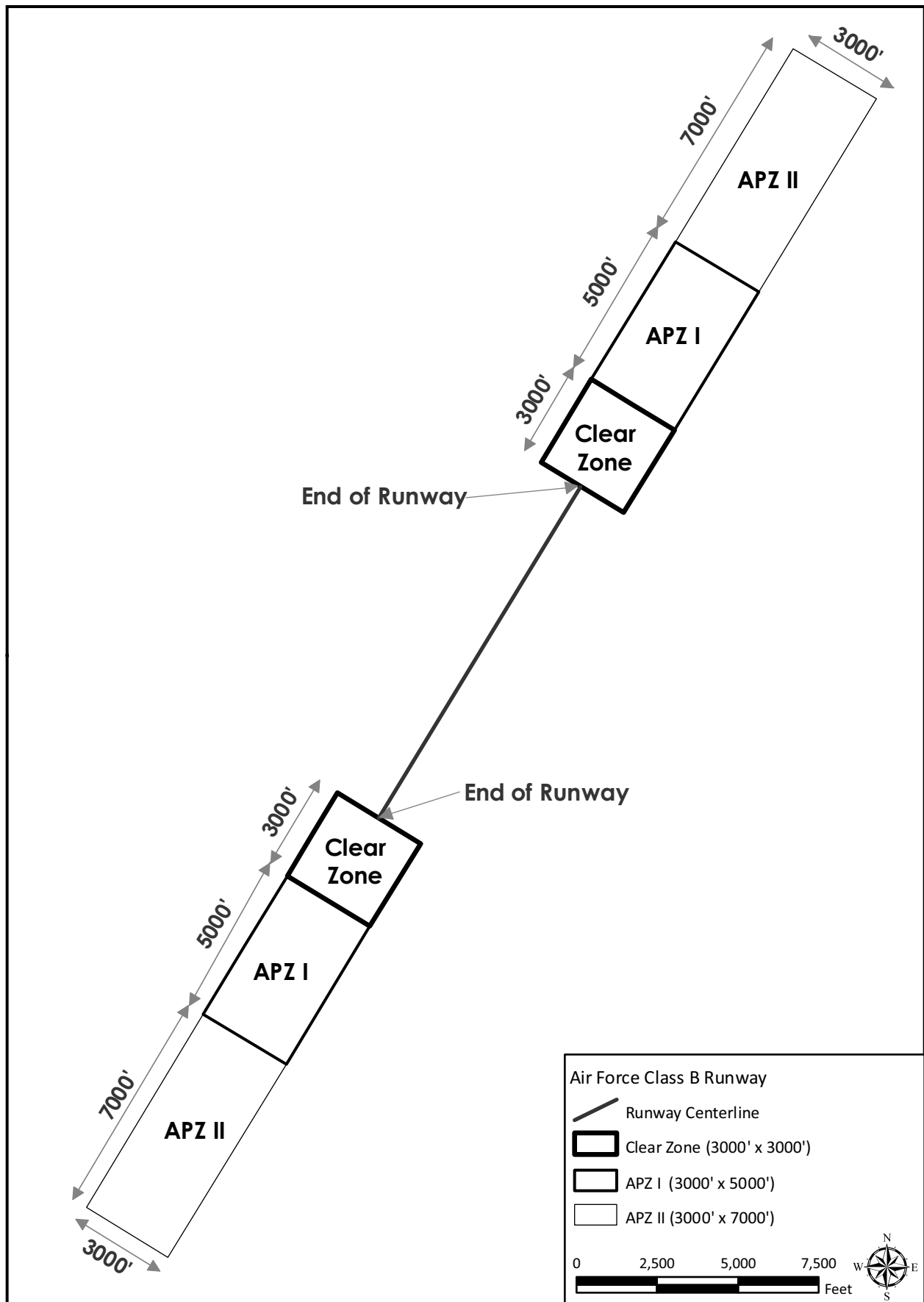
A variety of elements associated with implementation of the KC-46A scenarios at any of the four bases that could potentially affect safety are evaluated relative to the degree to which the action increases or decreases safety risks to the public or private property. Flight and ground safety are assessed for the potential to increase risk and the capability to manage that risk by responding to emergencies.

Impacts to safety are assessed according to the potential to increase or decrease in safety risks to personnel, the public and property. The development activities associated with the proposed KC-46A missions are considered to determine whether additional or unique safety risks are associated with its undertaking. If any activity associated with the KC-46A scenarios indicates a major variance from baseline conditions, it would be considered a significant safety impact.

#### **B.3.3.1 Flight Safety**

The primary public concern with regard to flight safety is the potential for aircraft accidents. Such mishaps may occur as a result of mid-air collisions, collisions with man-made structures or terrain, weather-related accidents, mechanical failure, pilot error, or bird-aircraft collisions. Collisions with structures around the airfield are controlled through airfield setbacks and safety zones that restrict construction around the airfield so that both the ground surface is clear for ground maneuvering and the airspace is clear of obstructions such as groves of trees, poles and power lines, and tall structures. The AICUZ defines the accident potential zones (APZs) around the airfield and prescribes restrictions on any construction in the clear zone (CZ) (see Figure B-1). Land use restrictions are recommended for APZs I and II, based mostly on the intensity of use. That is, activities where people congregate are not recommended, and uses where people spend a high percentage of time (such as residential) are also not recommended.

The USAF defines five major categories of aircraft mishaps: Classes A, B, C, D, and E, which includes high accident potential. Class A mishaps result in a loss of life, permanent total disability, a total cost in excess of \$2 million, and/or destruction of an aircraft. Class B mishaps result in permanent partial disability or inpatient hospitalization of three or more personnel and/or a total cost of between \$500,000 and up to \$2 million. Class C mishaps involve an injury resulting in any loss of time from work beyond the day or shift on which it occurred, an occupational illness that causes loss of time from work at any time, or an occupational injury or illness resulting in permanent change of job and/or reportable damage of between \$50,000 and up to \$500,000. High accident potential events are any hazardous occurrence that has a high potential for becoming a mishap. Class C mishaps and high accident potential, the most common types of accidents, represent relatively unimportant incidents because they generally involve minor damage and injuries, and rarely affect property or the public.



**Figure B-1. Air Force Clear Zone and Accident Potential Zones for Class B Runways**

Class D mishaps result in total cost of property damage of \$20,000 or more, but less than \$50,000; or a recordable injury or illness not otherwise classified as a Class A, B, or C mishap. Note that in 2010, the threshold for determining the class of mishaps was raised from \$1 to \$2 million for Class A mishaps, and the ceiling was raised for Class B from \$1 million to \$2 million.

Accident rates for commercial aircraft are determined using accidents per million departures (or flight cycles) since there is a stronger statistical correlation between accidents and departures than there is between accidents and flight hours, between accidents and the number of airplanes in service, or between accidents and passenger miles or freight miles.

This Final EIS focuses on USAF Class A mishaps because of their potentially catastrophic results. Based on historical data on mishaps at all bases, and under all conditions of flight, the military services calculate Class A mishap rates per 100,000 flying hours for each type of aircraft in the inventory. Mishap rates do not consider combat losses due to enemy action. In evaluating this information, it should be emphasized that data presented are only statistically predictive. The actual causes of mishaps are due to many factors, not simply the amount of flying time of the aircraft. Mishap rates are statistically assessed as an occurrence rate per 100,000 flying hours. For the purposes of this analysis, C-135 aircraft include the RC-135, EC-135, and the KC-135 since they share a common airframe based upon the Boeing 707, as modified for military use. Table B-4 reflects the cumulative annual USAF Class A mishap rates of the C-135 for the periods for which accident records have been established. Cargo and Command and Control type aircraft were included since their Mission-Design-Series are similar. The KC-135 entered service with the USAF in 1957; it is one of six military fixed-wing aircraft with over 50 years of continuous service with its original operator. Since the R model conversion of some of the fleet in the 1990s, the safety record of the KC-135 has been on par with that of any modern airliner.

**Table B-4. Air Force Class A Accident History for Selected Models of Transport Modified Mission Design/Code Aircraft**

Aircraft	Reporting Period	Accident Rate per 100,000 Hours	Lifetime Hours Flown
C-135 <sup>a</sup>	CY57-FY12	0.56	14,753,417
C-141	CY64-FY12	0.32	10,641,974
C-17	FY91-FY12	1.10	2,726,728
C-5	CY68-FY12	1.03	2,531,479
C-10	CY81-FY12	1.03	1,558,325

<sup>a</sup> Includes all variants such as EC and KC types, including EC-135, RC-135, and KC-135

Key: CY = calendar year; FY = fiscal year

Source: AFSC 2013

An aircraft crash is what is known in the probability analysis world as a low probability, high consequence risk. Aircraft are designed to ensure that aircraft accidents are rare events. To minimize these accidents, factors causing or contributing to accidents must be understood and prevented. Previous research has studied accident data to determine these factors. The low rate of accidents, however, makes it difficult to discover repeating patterns of these factors.

Levels of safety for commercial airframes are typically measured by the number of accidents and incidents and their rates. An aircraft accident is defined as an occurrence associated with the operation of an aircraft in which people suffer death or injury, and/or in which the aircraft receives substantial damage.

There have been many scholarly papers written, and complex mathematical calculations developed, to try and predict where and when an aircraft or other low probability, high consequence risk might occur. However, none of these efforts have resulted in a consensus or an agreed upon methodology within the risk assessor community.

The methodology of using accident rates as a predictor of the likelihood of a crash is what is commonly used. The accident rates are based upon accidents per 100,000 hours of flight for military aircraft. For commercial aircraft, in general, this expression is a measure of accidents per million departures.

The accident rates for the KC-46A were determined using the accident rate for the B-767 jetliner, which is currently in service. The accident rate for commercial airliners is based upon departures (flight cycles). With takeoffs assumed to be one-half of the total projected departure airfield operations (see operational data contained in Volume I, Chapter 2), the formula  $C_r \times A_o = 1/X$  (where  $C_r$  = crash rate and  $A_o$  = departure airfield operations) shows that the frequency of an accident, even with increased operations, is not likely to occur in the foreseeable future.

While it is counterintuitive, an increase in operation tempo (OPTEMPO) may not result in higher accident rates, and no correlation has been proved or disproved. In a 2002 report to Congress on military aviation safety, the Congressional Research Service concluded, “While no correlation between high OPTEMPO and increased mishaps has been proved, it also hasn’t been disproved. A great degree of uncertainty remains. Little is known, for example, of the OPTEMPO effects on maintenance, ammunition, training in country, living conditions, or personnel tempo” (CRS 2002). In other words, there are numerous unpredictable factors that may or may not contribute to an accident.

**Bird/Wildlife-Aircraft Strike Hazard (BASH).** Bird/wildlife-aircraft strikes constitute a safety concern for the USAF because they can result in damage to aircraft or injury to aircrews or local human populations if an aircraft crashes. Aircraft may encounter birds at altitudes up to 30,000 feet mean sea level (MSL) or higher. However, most birds fly close to the ground. More than 97 percent of reported bird strikes occur below 3,000 feet above ground level (AGL). Approximately 30 percent of bird strikes happen in the airport environment, and almost 55 percent occur during low-altitude flight training (AFSC 2013).

To address the issues of aircraft bird strikes, the USAF has developed the Avian Hazard Advisory System to monitor bird activity and forecast bird strike risks. Using Next Generation Radar (NEXRAD) weather radars and models developed to predict bird movement, the Avian Hazard Advisory System is an online, near real time, geographic information system (GIS) used for bird strike risk flight planning across the continental United States and Alaska. Additionally, as part of an overall strategy to reduce BASH risks, the USAF has developed a Bird Avoidance Model using GIS technology as a key tool for analysis and correlation of bird habitat, migration, and breeding characteristics and is combined with key environmental and man-made geospatial data. The model was created to provide USAF pilots and flight schedulers/planners with a tool for making informed decisions when selecting flight routes. The model was created in an effort to protect human lives, wildlife, and equipment during air operations. This information is integrated into required pilot briefings that take place prior to any sortie.

**Fuel Jettison.** The KC-46A, like the KC-135 aircraft, has the ability to jettison fuel in cases of emergency and non-emergency situations. Data on historical KC-135 operations show that slightly less than two sorties per thousand resulted in a release of fuel (USAF 2013).

The main environmental concern from fuel released from an aircraft is fuel deposition onto the ground and/or surface waters and any possible negative impacts on human health or natural resources. The results of a definitive study on the fate of jettisoned fuel from large USAF aircraft (such as the KC-135) (Deepti 2003) were used to identify a reasonably conservative ground-level fuel deposition value for the KC-46A. This study used the Fuel Jettison Simulation model developed by the USAF to estimate the ground deposition of fuel from jettison events (Teske and Curbishley 2000). This maximum ground-level fuel deposition value identified for the KC-46A would result in effects that are well below known natural resource and human health thresholds for jet fuel. Therefore, the maximum fuel deposition value expected from the KC-46A would not produce substantial or significant impacts on human or natural resources.

It is the policy of the Air Force Major Commands to follow AFIs or supplement those established AFIs. These policies require that pilots avoid fuel jettison, unless safety of flight dictates immediate jettison. For example, AMC policy, which covers all USAF tanker assets, requires that any fuel released from an aircraft must occur above 20,000 feet AGL (AMC 2004, 2012). Similar policy from AETC covers aircrews during training (AFI 11-2KC-135V3). These policies are designed to minimize potential impacts of fuel jettison events. In view of this, no further analysis is included in this section.

### **B.3.3.2 Ground Safety**

Day-to-day O&M activities conducted at AFBs are performed in accordance with applicable USAF safety regulations, published Air Force Technical Orders, and standards prescribed by Air Force Occupational Safety and Health requirements. These are intended to standardize procedures and practices in all activities on USAF property to reduce occupational risks to government personnel and contractors and to protect other persons that reside on or visit the base or the vicinity of the base.

**Anti-Terrorism/Force Protection.** Anti-Terrorism/Force Protection (AT/FP) is a security program designed to protect USAF active-duty personnel, civilian employees, family members, and facilities and equipment in all locations and situations. The program is accomplished through the planned and integrated application of anti-terrorism measures, physical security, operations security, and personal protective services. It is supported by intelligence, counterintelligence, and other security programs. In response to terrorist attacks, several regulations have been promulgated to ensure that force protection standards are incorporated into the planning, programming, and budgeting for the design and construction of Military Construction-funded facilities. Unified Facilities Criteria (UFC) 04-010-01, *DoD Minimum Antiterrorism Standards for Buildings* (published in 2003 and updated in 2007) (DoD 2007) establishes minimum standoff distances that must be maintained between several categories of structures and areas that are relatively accessible to terrorists.

The intent of AT/FP and design guidance is to improve security, minimize fatalities, and limit damage to facilities in the event of a terrorist attack. Many military bases, including those under consideration for beddown of the KC-46A, were developed before such considerations became a critical concern. Thus, under current conditions, many units are not able to completely comply with all present AT/FP standards. However, as new construction and modification of facilities occurs, AT/FP standards would be incorporated to the maximum extent practicable.

**Construction/Demolition Safety.** Short-term safety risks are associated with any demolition and construction activity, including those activities proposed as part of this action. However, adherence to standard safety practices would minimize any potential risks.

**Airfield Safety.** Accident potential relies on identifying where most accidents have occurred in the past at military airfields (USAF 2002). This approach does not produce accident probability statistics since the question of probability involves too many variables for an accurate prediction model to be developed. The analysis of the history of military aircraft accidents focuses on determining where (within the airfield environments) an accident is likely to occur and estimates the size of the impact area that is likely to result from any single accident. As per DoDI 4165.57, “AICUZ, Ground Obstructions,” all structures on the ground have the potential to create hazards to flight. The Federal Aviation Administration (FAA) provides detailed instructions for the marking of obstructions (i.e., paint schemes and lighting) to warn pilots of their presence. Any temporary or permanent structure, including all appurtenances, that exceeds an overall height of 200 feet AGL or exceeds any obstruction standard contained in 14 CFR Part 77 should normally be marked and/or lighted. The FAA may also recommend marking and/or lighting a structure that does not exceed 200 feet AGL or 14 CFR Part 77 standards because of its particular location. The obstruction standards in 14 CFR Part 77 are primarily focused on structures in the immediate vicinity of airports and approach and departure corridors from airports (14 CFR 77).

## **B.4 SOILS AND WATER**

### **B.4.1 RESOURCE DEFINITION**

The term “soils” refers to unconsolidated materials formed from the underlying bedrock or other parent material. Soils play a critical role in both the natural and human environment.

Water resources include surface water, groundwater, and floodplains. Surface water resources include lakes, rivers, and streams and are important for a variety of reasons, including economic, ecological, recreational, and human health factors. Groundwater includes the subsurface hydrologic resources of the physical environment; its properties are often described in terms of depth to aquifer or water table, water quality, and surrounding geologic composition.

### **B.4.2 REGULATORY SETTING**

The Clean Water Act (CWA) of 1977 (33 U.S.C. 1251 et seq.) and the USEPA Storm Water General Permit regulate pollutant discharges. Pollutants regulated under the CWA include “priority” pollutants, including various toxic pollutants, such as biochemical oxygen demand, total suspended solids, fecal coliform, oil and grease, and pH. Wetlands are discussed under the Biological Resources section below.

Federal agencies are also required to comply with Section 438 of the Energy Independence and Security Act of 2007 (EISA) for any project exceeding 5,000 square feet. Section 438 of the EISA instructs Federal agencies to use site planning, design, construction, and maintenance strategies for the property to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the property.

With respect to soil erosion, Section 402(p) of the CWA regulates non-point source discharges of pollutants, under the National Pollutant Discharge Elimination System (NPDES) program, or state equivalent program. This section of the CWA was amended to require the USEPA to establish regulations for discharges from active construction sites. NPDES General Construction Permits require preparation of a Storm Water Pollution Prevention Plan for projects greater than 1 acre.

Prime farmland is protected under the Farmland Protection Policy Act of 1981 (7 CFR 658). Prime farmland is defined as land that has the best combination of physical and chemical

characteristics for producing food, feed, forage, fiber, and oilseed crops, and is also available for these uses. The land could be cropland, pasture, rangeland, or other land, but not urban built-up land (defined by the U.S. Census Bureau, or U.S. Geological Survey topographic maps) or water. The project area at all four bases is classified by the U.S. Census Bureau as urbanized lands.

### **B.4.3 METHODOLOGY**

Impacts on soils and surface water can result from earth disturbance that would expose soil to wind or water erosion. Analysis of impacts on soils and surface water examines the potential for such erosion at each base and describes typical measures employed to minimize erosion. In addition, soil limitations and associated typical engineering remedial measures are evaluated with respect to proposed construction.

Criteria for evaluating impacts related to soil resources associated with implementation of the KC-46A scenarios are impacts on unique soil resources, minimization of soil erosion, and the siting of facilities relative to potential soil limitations. If development proposed in the EIS were to substantially affect any of these features, impacts would be considered significant.

Soil disturbance at each base was calculated by summing the square footages of additions/alterations and new construction.

Criteria for evaluating impacts related to water resources associated with implementation of the KC-46A scenarios are water availability, water quality, adherence to applicable regulations, and existence of floodplains. Impacts are measured by the potential to reduce water availability to existing users; to endanger public health or safety by creating or worsening health hazards or safety conditions; or to violate laws or regulations adopted to protect or manage water resources.

Flooding impacts are evaluated by determining whether proposed construction is located within a designated floodplain. Groundwater impacts are evaluated by determining whether groundwater beneath the project site would be used for implementing the KC-46A mission, and if so, by determining the potential to adversely affect those groundwater resources. Soils and water resource impacts are not evaluated for the areas below where the KC-46A would be operated or at the auxiliary airfields because no ground-disturbing activities or use of water resources would occur at these locations.

## **B.5 BIOLOGICAL RESOURCES**

### **B.5.1 RESOURCE DEFINITION**

Biological resources include the native and introduced terrestrial and aquatic plants and animals found within the region of influence (ROI). The ROI for biological resources is defined as the land area (habitats) and airspace that could potentially be affected by infrastructure and construction projects, as well as airspace operations. The ROI generally includes the developed cantonment and airfield areas of the respective bases, but may also include areas near but outside the base boundary. Examples of off-base areas include managed wildlife areas and surface waters that could be indirectly affected by noise or water quality alteration, respectively. Habitat types are based on floral, faunal, and geophysical characteristics.

Sensitive habitats include areas that the Federal government, state governments, or the DoD have designated as worthy of special protection due to certain characteristics such as high species diversity, special habitat conditions for rare species, or other unique features.

For purposes of analysis, biological resources were organized into four categories: vegetation, wildlife, special-status species, and wetlands. Vegetation includes existing terrestrial plant communities but does not include special-status plants, which are discussed below. Plant species composition within an area generally defines ecological communities and indicates the type of wildlife that may be present.

Wildlife includes all vertebrate animal species, with the exception of special-status species, which are discussed below. Typical wildlife includes animal groups such as large and small mammals, songbirds, waterfowl, reptiles, amphibians, and fish. The attributes and quality of available habitats influences the composition, diversity, and abundance of wildlife communities.

Special-status species are defined as those plant and animal species protected by various regulations established by Federal and state agencies. These regulations, and the species addressed by them, are described in the Regulatory Setting section below.

Wetlands are areas of transition between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is covered by shallow water (Mitsch and Gosselink 2000).

## **B.5.2 REGULATORY SETTING**

“Integrated Natural Resources Management,” AFI 32-7064, explains how to manage natural resources on USAF property in compliance with Federal, state, and local standards. The chief tool for managing base ecosystems is the Integrated Natural Resources Management Plan (INRMP). Based on an interdisciplinary approach to ecosystem management, the INRMP ensures the successful accomplishment of the military mission by integrating all aspects of natural resources management with each other and the rest of the base’s mission.

Special-status plant and wildlife species are subject to regulations under the authority of Federal and state agencies. Special-status species include species designated as threatened, endangered, or candidate species by state or Federal agencies. Under the Endangered Species Act (ESA) (16 U.S.C. 1536), an endangered species is defined as any species in danger of extinction throughout all or a significant portion of its range. A threatened species is defined as any species likely to become an endangered species in the foreseeable future. Candidate species are those species for which the U.S. Fish and Wildlife Service (USFWS) has sufficient information on their biological status and threats to propose them as endangered or threatened under the ESA, but for which development of a proposed listing regulation is precluded by other higher-priority listing activities. Although candidate species receive no statutory protection under the ESA, the USFWS believes it is important to advise government agencies, industry, and the public that these species are at risk and could warrant protection under the ESA.

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-712) is the domestic law that affirms, or implements, the United States’ commitment to four international conventions (with Canada, Japan, Mexico, and Russia) for the protection of a shared migratory bird resource. Each of the conventions protect selected species of birds that are common to both countries (i.e., species occur in both countries at some point during their annual life cycle). The act protects all migratory birds and their parts (including eggs, nests, and feathers).

The Bald and Golden Eagle Protection Act (BGEPA) (16 U.S.C. 668-668d) is legislation in the United States that protects two species of eagles. The BGEPA prohibits anyone without a permit issued by the Secretary of the Interior from “taking” bald eagles. Taking involves molesting or disturbing birds, their parts, nests, or eggs. The BGEPA provides criminal penalties for persons

who “take, possess, sell, purchase, barter, offer to sell, purchase or barter, transport, export or import, at any time or any manner, any bald or golden eagles... [or any golden eagle], alive or dead, or any part, nest, or egg thereof.”

Section 404 of the CWA established a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. The U.S. Army Corps of Engineers (USACE) is the lead agency in protecting wetland resources. This agency maintains jurisdiction over Federal wetlands (33 CFR 328.3) under Section 404 of the CWA (30 CFR 320-330) and Section 10 of the Rivers and Harbors Act (30 CFR 329). The USEPA assists the USACE (in an administrative capacity) in the protection of wetlands (40 CFR 225.1 to 233.71). In addition, the USFWS and the National Marine Fisheries Service provide support with important advisory roles.

Furthermore, Executive Order (EO) 11990, *Protection of Wetlands*, requires Federal agencies, including the USAF, to minimize the destruction, loss, or degradation of wetlands and to preserve and enhance the natural and beneficial values of wetlands. EO 11990 requires Federal agencies to avoid, to the extent possible, the long- and short-term adverse impacts associated with the destruction or modification of wetlands and to avoid direct or indirect support of new construction in wetlands wherever there is a practicable alternative; if construction in wetlands cannot be avoided, the USAF will issue a Finding of No Practicable Alternative.

Under CWA Section 401, applicants for a Federal license or permit to conduct activities that may result in the discharge of a pollutant into waters of the United States must obtain certification from the state in which the discharge would originate or, if appropriate, from interstate water pollution control agency with jurisdiction over affected waters at the point where the discharge would originate. Therefore, all projects that have a Federal component and may affect state water quality (including projects that require Federal agency approval, such as issuance of a Section 404 permit) must also comply with CWA Section 401.

The following state agencies issue Section 401 certifications in their respective states: the Department of Environmental Quality in Oklahoma; the Department of Ecology in Washington; the Department of Health, Division of Water Quality, in North Dakota; and the Department of Health and Environment in Kansas.

### **B.5.3 METHODOLOGY**

The first step in the analysis of potential impacts on biological resources was to determine the locations of sensitive habitats and species in relation to the proposed action. Maps were examined to locate sensitive habitats and species, and where necessary, site visits and additional surveys were conducted to confirm locations. Next, areas of overlap for the proposed development and sensitive habitats and species were identified. Scientific literature was reviewed for studies that examined similar types of impacts on biological resources. The literature review included a review of basic characteristics and habitat requirements of each sensitive species. Where available, information was also gathered relative to management considerations, incompatible resource management activities, and threats to each sensitive species. Impact analyses were then conducted based on the information gathered from the literature review. The analyses included an assessment of the impacts on biological resources resulting from both construction activities and daily operations. Measures to avoid and/or minimize adverse impacts

on biological resources are also presented. The following criteria were evaluated when determining the significance of an effect on biological resources resulting from implementation of actions described in Volume I, Chapter 2:

- The direct impact or taking of a protected special-status species, including habitat alteration
- The importance (legal, commercial, ecological, or scientific) of the resource
- The relative sensitivity of biological resources to potential effects of the actions
- The quantity or percentage of biological resources affected by the actions relative to overall abundance in the ROI
- The expected duration of potential impacts resulting from implementation of the actions

Determination of the significance of wetland impacts is based on (1) loss of wetland acreage, (2) the function and value of the wetland, (3) the proportion of the wetland that would be affected relative to the occurrence of similar wetlands in the region, (4) the sensitivity of the wetland to proposed activities, and (5) the duration of ecological ramifications. Impacts on wetland resources are considered significant if high-value wetlands would be adversely affected or if wetland acreage is lost.

## **B.6 CULTURAL RESOURCES**

### **B.6.1 RESOURCE DEFINITION**

Cultural resources are historic districts, sites, buildings, structures, or objects considered important to a culture, subculture, or community for scientific, traditional, religious, or other purposes. They include archaeological resources, historic architectural/engineering resources, and traditional resources. Only significant cultural resources are considered for potential adverse impacts from an action. Significant cultural resources are those eligible for inclusion in the National Register of Historic Places (NRHP), as set forth in 36 CFR 60.4, or identified as important to tribes or other traditional groups, as outlined in the American Indian Religious Freedom Act; the Native American Graves Protection and Repatriation Act; and EO 13007, *Indian Sacred Sites*. Historic properties are any prehistoric or historic districts, sites, buildings, structures, or objects included or eligible for inclusion in the NRHP because of their historic or cultural significance. For a cultural resource to be considered eligible for the NRHP, it must possess integrity of location, design, setting, materials, workmanship, feeling, or association, and it must meet one or more of the following criteria (36 CFR 60.4):

- Association with events that have made a significant contribution to the broad patterns of our history (criterion a).
- Association with the lives or persons significant in our past (criterion b).
- Embodiment of distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction (criterion c).
- Have yielded, or may be likely to yield, information important in prehistory or history (criterion d).

In general, these resources must be more than 50 years old; however, younger resources may be eligible if they are exceptionally significant.

Section 101(d)(6)(A) of the National Historic Preservation Act (NHPA) states that properties of traditional religious and cultural importance to a tribe or Native Hawaiian organization may be determined to be eligible for inclusion in the NRHP. NRHP Bulletin 38 (NPS 1998) defines traditional cultural property (TCP), generally, as one that is eligible for inclusion in the NRHP. Reasons for eligibility could be because of its association with cultural practices or beliefs of a living community that are rooted in that community's history and are important in maintaining the continuing cultural identity of the community. TCPs can include archaeological resources, buildings, neighborhoods, prominent topographic features, habitats, plants, animals, and minerals that tribes and other groups consider essential for the continuance of traditional cultures.

However, properties of traditional religious and cultural importance need not be determined eligible for the NRHP to be a significant cultural resource considered for potential adverse impacts from an action. On 21 November 1999, the DoD promulgated its American Indian and Alaska Native Policy, which emphasizes the importance of respecting and consulting with tribal governments on a government-to-government basis (DoD 1999). The policy requires an assessment, through consultation, of the effect of proposed DoD actions that may have the potential to significantly affect protected tribal resources, tribal rights, and tribal and Alaska Native lands, before decisions are made by the services. DoDI 4710.02, "DoD Interactions with Federally-Recognized Tribes," implements DoD policy, assigns responsibilities, and provides procedures for DoD interactions with federally recognized tribes in accordance with its American Indian and Alaska Native Policy and other DoD directives and policies.

EO 13007 defines *sacred sites* as any specific, discrete, narrowly delineated location on Federal land that is identified by a tribe or individual as sacred by virtue of its established religious significance to or ceremonial use by a tribal religion and identified as such to the land managing agency. EO 13007 also requires agencies to accommodate access to, and ceremonial use of, sacred sites by tribal religious practitioners and to avoid adversely affecting their physical integrity.

## **B.6.2 REGULATORY SETTING**

"Cultural Resources Management," DoDI 4715.16, (DoD 2008), and AFI 32-7065, "Cultural Resources Management," (USAF 2004) outline and specify proper procedures for cultural resource management on USAF bases.

Laws pertinent to the proposed action include the NHPA of 1966, as amended; the Antiquities Act of 1906; the Historic Sites Act of 1935; NEPA; the Archaeological and Historic Preservation Act of 1974; the Archaeological Resources Protection Act of 1979; the Native American Graves Protection and Repatriation Act of 1990; and the American Indian Religious Freedom Act of 1978.

Under Section 106 of the NHPA, the USAF is required to consider the effects of its undertakings at each location on historic properties listed, or eligible for listing, in the NRHP and to consult with the State Historic Preservation Office (SHPO), Tribal Historic Preservation Office, and others regarding potential effects as per 36 CFR 800. Under AFI 32-7065, recorded cultural resources not evaluated for NRHP eligibility must be managed as eligible. Under Section 110 of the NHPA, each location is mandated to maintain an active historic preservation program and provide stewardship of cultural resources "consistent with the preservation of such properties and the mission of the agency (Section 470 h-2(a))."

Federal regulations governing cultural resource activities include the following: 36 CFR 800, *Protection of Historic Properties* (incorporating amendments effective August 5, 2004); 36 CFR 79, *Curation of Federally Owned and Administered Archaeological Collections*; 43 CFR 7, *Protection of Archaeological Resources*; 36 CFR 60, *National Register of Historic Places*; and 36 CFR 63, *Determinations of Eligibility for Inclusion in the National Register*. Cultural resource-related EOs that may affect the locations include the following: EO 11593, *Protection and Enhancement of the Cultural Environment*; EO 13007, *Indian Sacred Sites*; EO 13175, *Consultation and Coordination with Indian Tribal Governments*; and EO 13287, *Preserve America*.

### **B.6.3 METHODOLOGY**

Impact analysis for cultural resources focuses on assessing whether the KC-46A mission would have the potential to affect cultural resources that are eligible for listing in the NRHP or have traditional significance for tribes. For this Final EIS, impact analysis for cultural resources focuses on, but is not limited to, guidelines and standards set forth in NHPA Section 106's implementing regulations (36 CFR 800). Under Section 106 of the NHPA, the proponent of the action is responsible for determining whether any historic properties are located in the area, assessing whether the proposed undertaking would adversely affect the resources, and notifying the SHPO of any adverse effects. An adverse effect is any action that may directly or indirectly change the characteristics that make the historic property eligible for listing in the NRHP. If an adverse effect is identified, the Federal agency consults with the SHPO and federally recognized tribes to develop measures to avoid, minimize, or mitigate the adverse effects of the undertaking.

Analysis of potential impacts on cultural resources considers both direct and indirect impacts.

Impacts may occur through the following:

- Physically altering, damaging, or destroying all or part of a resource
- Altering characteristics of the surrounding environment that contribute to the resource's significance
- Introducing visual or audible elements that are out of character with the property or alter its setting
- Neglecting the resource to the extent that it deteriorates or is destroyed

Direct impacts are assessed by (1) identifying the nature and location of all elements of the proposed action and alternatives; (2) comparing those locations with identified historic properties, sensitive areas, and surveyed locations; (3) determining the known or potential significance of historic properties that could be affected; and (4) assessing the extent and intensity of the effects. Indirect impacts occur later in time or farther from the proposed action. Indirect impacts on cultural resources generally result from the effects of project-induced population increases, such as the need to develop new housing areas, utility services, and other support functions to accommodate population growth, or increased visitation of a remote area due to improved vehicle access. These activities and the subsequent use of the facilities can impact cultural resources.

A key component of this analysis is defining the area of potential effect, defined as "the geographic area or areas within which an undertaking may directly or indirectly cause alterations in the character or use of historic properties, if any such properties exist" (36 CFR 800.16(d)).

Archaeological and historic architectural resources at the bases were characterized using existing survey and analysis information from Integrated Cultural Resources Management Plans (ICRMPs), archaeological survey reports, historic buildings survey reports, local histories, and the records of the NRHP and National Historic Landmarks. These documents provided information on known locations of significant resources. In compliance with Section 106 of the NHPA, the USAF consulted with the relevant SHPOs regarding the area of potential effect and potential cultural resource concerns for the proposed action. NRHP-eligible or -listed properties at each base are identified in the base-specific sections.

The potential for traditional resources at the bases was identified using ICRMPS and information provided by base cultural resource management staff. Potentially interested tribes were contacted to request information on potential concerns about the proposed action.

In this analysis, demolition, construction, and other base-specific actions needed to support the KC-46A basing are part of the alternatives. The assessment of adverse effects takes into account both the potential for physical damage or destruction of historic properties at the bases and the potential adverse effects of visual intrusions, noise, and vibration on historic properties at the bases. Properties eligible for inclusion in the NRHP for their scientific information potential generally are not adversely affected by the introduction of auditory or visual intrusions. Conversely, if integrity of setting or feeling is an important element of a property's eligibility, that property may be adversely affected by the introduction of auditory or visual intrusions.

Impacts on properties of traditional religious and cultural importance (hereafter referred to as "traditional cultural resources") can result from noise and visual effects of aircraft overflights on rituals and ceremonies and on wildlife resources. The USAF's ongoing consultation with tribes may identify places of traditional cultural importance or other types of cultural resources that might be adversely affected by auditory or visual intrusions or other elements of the proposed action.

## **B.7 LAND USE**

### **B.7.1 RESOURCE DEFINITION**

Land use describes the way the natural landscape has been modified or managed to provide for human needs. In developed and urbanized areas, land uses typically include residential, commercial, industrial, utilities and transportation, recreation, open space, and mixes of these basic types. Other uses such as mining, extractive activities, agriculture, forestry, and specially protected areas (such as larger monuments, parks, and preserves) are usually found on the fringes or outside of urbanized areas. Plans and policies guide how land resources are allocated and managed to best serve multiple needs and interests. Ordinances and regulations define specific limitations on uses.

The attributes of land use addressed in this analysis include general land use patterns within and surrounding each military base and the land use regulatory setting. The regulatory setting is the framework for managing land use and approving new development. It pertains to Federal, state, and local statutes, regulations, plans, programs, and ordinances.

**Region of Influence.** The ROI for the land use analyses in this Final EIS includes the land within and surrounding each base. The analysis considers an area that encompasses the full extent of airfield accident zones, and areas exposed to noise levels of concern, plus a reasonable buffer of a few miles. This ROI provides for a wider context of jurisdictional divisions that influence land use patterns around each base.

## **B.7.2 REGULATORY SETTING**

The regulatory setting for land use includes the key Federal, state, and local statutes, regulations, plans, policies, and programs applicable to land use on and near each base. The land use discipline assumed the Federal noise compatibility requirements as identified below.

*Airfield and Heliport Planning and Design – DoD UFC 3-260-01.* Several siting criteria have been established specific to land development and use at commercial and military airfields. To maintain safety, the USAF adheres to guidelines set forth in UFC 3-260-01, *Airfield and Heliport Planning and Design* (UFC 3-260-01). These criteria include CZs, APZs, and other obstruction zones relative to airfield environments. These and other criteria related to safety, security, and other land use issues are used to assist planners and decision makers with appropriate siting of facilities affecting design and physical layout of USAF bases.

*FICUN Land Use Guidelines (1980).* In 1980, FICUN was formed to develop Federal policy and guidance on noise. The committee included the USEPA, FAA, Federal Highway Administration, DoD, Department of Housing and Urban Development, and the U.S. Department of Veterans Affairs. The designations contained in the FICUN compatibility table for land use do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, state, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities.

*Air Installation Compatibility Use Zone (AICUZ) Program (DoDI 4165.57).* Establishes the AICUZ program, which is similar to the FAA's Federal Aviation Regulations Part 150 program for civil airports. The AICUZ program is a DoD discretionary program designed to promote compatible land use around military airfields. The military services maintain an AICUZ program to protect the operational integrity of their flying mission.

Areas around airfields are exposed to the potential of aircraft accidents despite well-maintained aircraft with highly trained aircrews. DoD developed the AICUZ program to aid in the development of planning mechanisms that protect the safety and health of personnel on and near military airfields and to preserve operational capabilities. The AICUZ program consists of three distinct parts: APZs, hazards to air navigation (height and obstruction criteria established by the FAA), and noise zones.

Bases use the AICUZ program to provide land use compatibility guidelines for areas exposed to increased safety risks and noise near the airfield. The noise compatibility guidelines recommended in the AICUZ program are similar to those used by the Department of Housing and Urban Development and FAA to provide information to surrounding jurisdictions to guide planning and regulation of land use. When noise levels exceed a DNL of 65 dB, residential land uses are normally considered incompatible.

## **B.7.3 METHODOLOGY**

Potential impacts on land use can result from actions that (1) change the suitability of a location for its current or planned use (e.g., noise exposure in residential areas); (2) cause conditions that are unsafe for the public welfare; (3) conflict with the current and planned use of the area based on current zoning, amendments, agreements, regulatory restrictions, management, and land use plans; or (4) displace a current use with a use that does not meet the goals, objectives, and desired use for an area based on public plans or resolutions. The degree of land use effects (negligible, minor, moderate, or significant) is based on the level of land use sensitivity in areas

affected by a proposed action, the magnitude of change, and the compatibility of a proposed action with existing or planned land uses. The assessment considers multiple contextual factors that are both quantified and qualitative.

The evaluation primarily focuses on changes resulting from the action that may affect off-base areas. Also considered are potential effects on community amenities within the base such as schools, child care facilities, and housing areas. For each scenario, the following land use impact drivers are considered:

- Construction and demolition on base (effects such as temporary dust, noise and traffic and longer-term noise or visual changes affecting community areas and nearby off-base locations). The assessment considers the extent of redevelopment, duration, and proximity to sensitive locations of on-base and off-base areas.
- O&M activities for the new mission (generating noise, odors, or traffic). The assessment considers whether the action involves any unusual or new activities, and proximity to sensitive locations of on-base and off-base areas.
- Aircraft operations at the base and in the surrounding area, including engine run ups, takeoffs and landings, and closed pattern work. The assessment evaluates changes in noise exposure levels and the location of noise relative to existing land use, planned uses, and zoning, focusing on land use compatibility with projected noise levels and accident potential following DoD guidelines.
- Change in base population (causing indirect impacts such as congestion in nearby neighborhoods).

The following steps are used to evaluate the impacts on land use from the proposed alternatives:

1. Characterize and describe existing land use and conditions (Volume I, Chapter 3).
  - Describe general context for the base in the local area (whether urbanized, rural, or natural) and describe jurisdictional boundaries within the area around the airfield.
  - Describe the overall organization of functions on the base (using site plans, Base General Plans, other NEPA documents).
  - Describe the land use setting surrounding the base, using aerial photography (National Agriculture Imagery Program [NAIP] 1-meter aerial imagery), notes from site visits, land use plans by local jurisdictions, current zoning.
  - Describe current compatibility planning efforts for the base and status of compatibility around the airfield (based on AICUZ studies, Joint Land Use Studies, airfield zoning districts, airfield noise complaint logs).
  - Identify current noise exposure for land uses surrounding the airfield (using maps with baseline noise contours superimposed on aerial photography), describe noise levels affecting current uses and compatibility of the current exposure levels, and identify specific sensitive receptors affected by incompatible noise levels (such as schools and child development centers) based on the DoD noise compatibility guidelines.
2. Evaluate effects on land use of new construction and demolition. The analysis considers direct and indirect effects of redevelopment based on size of construction effort, location of projects relative to sensitive uses (for example, new industrial-type functions relative to family housing areas), and duration of construction.

3. Evaluate effects on land use of new O&M activities. Qualitatively consider if changes in O&M activities can have indirect effects on the suitability of areas outside the base for their current or planned uses. These effects may include dust, noise, traffic, visual modifications.
4. Assess whether any induced changes such as new housing demands in the local area pose any particular concerns for land use.
5. Quantify and locate changes in noise exposure from aircraft operations.
  - Estimate change in acreage of land on and off the base exposed to noise levels of 65 dB DNL and greater at 5 dB intervals. Consider the relative degree of change in exposure in the surrounding area.
  - Overlay projected and baseline noise contours on aerial photographs to locate where changes in noise exposure would occur. Identify projected noise exposure for land uses surrounding the airfield (using maps with baseline noise contours superimposed on aerial photography). Describe where the changes occur, what land use is affected, degree of change (decibel increase), and compatibility of the land use with the change.
  - Where changes in exposure interact with incompatible land use, a more careful evaluation of the zoning and potential future development of the affected area is included. This considers potential for future changes in land use or infill that could heighten an existing incompatible condition. Where residential land is impacted, review of aerial photography and zoning ordinances is used to determine the relative density of homes and potential for future infill. The analysis also identifies how and if current noise compatibility planning is adequate to protect airfield and community interests.
6. The impact assessment considers the degree or intensity of projected accident risk at the airfield in combination with current or possible future incompatible uses in the APZs (context). The analysis rates the degree of existing land use compatibility in the CZs and APZs based on DoD's land use compatibility guidelines using levels of incompatible land uses and occupied structures within the APZs and CZs. Because accident risk is extremely low, the current condition of land use compatibility in the APZs and CZs is the dominant criteria in assessing impacts on land use.

## **B.8 INFRASTRUCTURE**

### **B.8.1 RESOURCE DEFINITION**

Infrastructure consists of the systems and physical structures that enable the population of a USAF base to function. Infrastructure is primarily human-made, with a high correlation between the type and extent of infrastructure and the degree to which an area is characterized as urban, or developed built environment. The availability of infrastructure and its capacity for expansion are essential to the ability of the base to carry out a specific mission, operations, and provide for the needs of the employees and residents.

Utilities analyzed for each of the four bases in this Final EIS include water supply and distribution, sanitary sewer and wastewater systems, stormwater drainage, electrical system, natural gas, solid waste, and transportation. Solid waste management primarily relates to the availability of systems and landfills to support a population's residential, commercial, and

industrial needs. AFI 32-7042, “Waste Management,” incorporates the requirements of Subtitle D, 40 CFR 240 through 244, 257, and 258, applicable Federal regulations, AFIs, and DoD directives. It also establishes the requirement for bases to have a solid waste management plan; procedures for handling, storage, collection, and disposal of solid waste; record keeping and reporting; and pollution prevention (USAF 2009). The infrastructure information contained in this section provides a brief overview of each infrastructure component and describes its capacities, effectiveness, deficiencies, and existing general condition.

Transportation infrastructure includes the public roadway network, public transportation systems, airports, railroads, pedestrian/bicycle facilities, and waterborne transportation required for the movement of people, materials, and goods. The proposed action has the potential to impact the public roadways that provide access to the bases, base access control points or gates, and the internal roadway systems of the bases. Roadways are typically assigned a functional classification by state departments of transportation. Functional classification is the process by which streets and highways are grouped into classes, or systems, according to the character of service they are intended to provide. The three main functional classifications for roadways include:

- Arterial – These roadways provided mobility so traffic can move from one place to another quickly and safely.
- Collector – These roadways link arterials and local roads and perform some of the duties of each.
- Local – These roadways provide access to homes, businesses, and other property.

## **B.8.2 REGULATORY SETTING**

There is no applicable regulatory setting for infrastructure and transportation resources.

## **B.8.3 METHODOLOGY**

Effects on infrastructure were evaluated for the KC-46A FTU and MOB 1 scenarios based on the potential for disruption or improvement of existing levels of service and additional needs for water, energy and natural gas consumption, wastewater and stormwater drainage systems, and solid waste system availability. Changes in population and proposed development were used to determine impact on infrastructure. For each scenario, the maximum demand or impact to capacity was calculated for the potable water, wastewater, electric and natural gas systems based on the change in population. For the transportation analysis, any change in population was assumed to reside off base.

The impact analysis consisted of a quantitative assessment, based on available information for average and peak use and demand data for each on-base utility and the ability of a utility provider to absorb a given level of demand increase for its service area, and a qualitative assessment of the physical condition of each on-base system. Impacts might arise from physical changes to utility supply and distribution systems over their design life cycle and energy needs created by either direct or indirect workforce and population changes related to base activities. An effect would be considered adverse if the proposed FTU or MOB 1 scenario requirements caused any of the following:

- A violation of a permit condition or contract with a utility provider
- A capacity exceedance of a utility or solid waste facility

- If a system could not sustain a mission increase due to poor condition, inefficient function, or operation
- If a mission increase would require costly upgrades
- A long-term interruption of a utility

To assess the potential environmental consequences associated with transportation resources, increased utilization of the existing roadway system and base access gates due to the potential increase of personnel is analyzed, as well as potential effects of construction activities. Impacts could arise from physical changes to circulation, construction-related traffic delays, and changes in traffic volumes. Adverse impacts on roadway capacities would be significant if roads with no history of capacity exceedance had to operate at or above their full design capacity as a result of implementation of the KC-46A scenarios.

## **B.9 HAZARDOUS MATERIALS AND WASTE**

### **B.9.1 RESOURCE DEFINITION**

The terms “hazardous materials” and “hazardous waste” refer to substances that, because of their quantity, concentration, or physical, chemical, or infectious characteristic, may present substantial danger to public health or the environment when released into the environment.

Products containing hazardous materials that may result in the generation of hazardous waste include aviation fuel, adhesives, sealants, conversion coatings, corrosion preventative compounds, hydraulic fluids, lubricants, oils, paints, polishes, thinners, and cleaners.

### **B.9.2 REGULATORY SETTING**

The key Federal regulatory requirements related to hazardous materials and waste include:

- Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901 et seq.)
- Emergency Planning and Community Right-to-Know Act of 1986 (42 U.S.C. 11001-11050)
- Comprehensive Environmental Response, Compensation, and Liability Act of 1980, as amended by the Superfund Amendments and Reauthorization Act of 1986 (42 U.S.C. 9601-9675)
- Community Environmental Response Facilitation Act of 1992 (42 U.S.C. 9620)
- Asbestos Hazard Emergency Response Act (15 U.S.C. 2651)
- Spill Prevention, Control and Countermeasure Rule (40 CFR 112)
- USEPA Regulation on Identification and Listing of Hazardous Waste (40 CFR 261)
- USEPA Regulation on Standards for the Management of Used Oil (40 CFR 279)
- USEPA Regulation on Designation, Reportable Quantities, and Notification (40 CFR 302)
- EO 13514, *Federal Leadership in Environmental, Energy, and Economic Performance*
- Toxic Substances Control Act of 1976 (40 CFR 700–766)
- Clean Air Act of 1970, including the 1990 Clean Air Act Amendments (40 CFR 61)

Several USAF regulations address the management and safe handling of hazardous materials and wastes in accordance with applicable Federal and state regulations. These include:

- AFI 32-7086, “Hazardous Material Management”
- AFI 32-7042, “Solid and Hazardous Waste Compliance”
- AFI 32-1052, “Facility Asbestos Management”

### **B.9.3 METHODOLOGY**

The exact amounts of hazardous waste that would be generated under each scenario are unknown at this time. The qualitative and quantitative assessment of impacts from hazardous materials and waste management focuses on how (context) and to what degree (intensity) each location could affect hazardous materials usage and management, hazardous waste generation and management, and hazardous waste disposal. Potential impacts related to hazardous materials and wastes were analyzed for the following five effects:

1. Generation of hazardous material/waste types or quantities could not be accommodated by the current management system.
2. Increased likelihood of an uncontrolled release of hazardous materials that could contaminate the soil, surface water, groundwater, or air.
3. Non-compliance with applicable Federal and state regulations as a result of the proposed action.
4. Disturbance or creation of contaminated sites, resulting in adverse effects on human health and/or the environment.
5. Established management policies, procedures, and handling capacities could not accommodate the proposed action.

## **B.10 SOCIOECONOMICS**

### **B.10.1 RESOURCE DEFINITION**

Socioeconomics refers to features or characteristics of the social and economic environment. The main concern for socioeconomic resources is the change in personnel associated with the KC-46A FTU and MOB 1 scenarios that could potentially impact population, employment, earnings, housing, education, and public services.

### **B.10.2 REGULATORY SETTING**

There is no applicable regulatory setting for socioeconomics.

### **B.10.3 METHODOLOGY**

The socioeconomic analysis focuses on the effects resulting from the personnel changes, as well as construction and/or operation and maintenance under each scenario. To estimate the changes in population to the ROI, the total number of military personnel, military dependents and family members, and students (if any) as indicated in the personnel tables in Volume I, Chapter 2 (Tables 2-4, 2-7, 2-10, 2-13, 2-16, 2-19) were added together and assumed to be migrating to the area. For this analysis, any DoD civilians, part-time Reservists, or contractors (other base personnel) identified in Volume I, Chapter 2, associated with the KC-46A FTU scenario, MOB 1 scenario, or KC-135 mission were assumed to be from the local population and were not considered to be incoming personnel. Therefore, under these assumptions, the changes to the

number of DoD civilians, part-time Reservists, and contractors would not impact population, housing, education, or public services.

To determine the change in on-base jobs, the total change in full-time military personnel, students (if any), DoD civilians, and contractors was added to the existing on-base total work force. Part-time Reservists were not considered to be part of the work force since the Air Force Reserves typically only serve one weekend per month, in any areas they choose to live, and are on temporary duty assignment two weeks a year. For this reason, any change in the number of part-time Reservists associated with each scenario was also not considered as part of the incoming population that would impact housing, economic activity, education, public services, and base services.

The economic impact analysis used to determine the effect of construction and operation and maintenance costs (if any) was conducted using the Impact Analysis for Planning (IMPLAN) economic forecasting model. The IMPLAN model uses data from the U.S. Bureau of Labor Statistics and the U.S. Bureau of Economic Analysis to construct a mathematical representation of the local economics using the region-specific spending patterns, economic multipliers, and industries (MIG 2012). In this analysis, the IMPLAN model provided representations of the county-wide economy at each location. Economic impacts are analyzed by introducing a change to a specific industry in the form of increased or decreased employment or spending; the IMPLAN model mathematically calculates the resulting changes in the local economy. In this analysis, the IMPLAN model estimates the economic effects of the incoming personnel on spending and employment in the established ROI. The economic impacts analysis separates effects into three components: direct, indirect, and induced. Direct effects are the change in employment and income generated directly by the expenditures of the incoming or outgoing personnel. To produce the goods and services demanded by the incoming personnel, businesses, in turn, may need to purchase additional goods and services from other businesses. The employment and incomes generated by these secondary purchases would result in the indirect effects. Induced effects are the increased household spending generated by the direct and indirect effects. The overall effect from the economic impact analysis is the total number of jobs created throughout the ROI by the direct, indirect, and induced effects. The construction and O&M costs used in the economic activity section were provided by the USAF during the site survey reports.

To determine whether the local housing market could support the personnel associated with the FTU or MOB 1 scenarios, several assumptions were made. The first assumption was that DoD civilians, part-time Reservists, and contractors were already residing in the local population and any change to the number of these personnel would not influence the local housing market. The second assumption was that the total number of homes required off base was equal to the total number of incoming full-time military personnel. This number was compared against the number of vacant housing units as defined by the 2010 census. If the number of incoming full-time military personnel did not exceed the number of vacant housing units as defined by the 2010 census, the housing market in the ROI was anticipated to be able to support the incoming population.

Students assigned to the FTU would be assumed to be in transient status. Of the 200 students associated with the FTU scenario, 180 students would be lodged in either on base or off base facilities. The other 20 students would be assumed to be non-prior service Airmen, and would thus be required to live in an on base dormitory. Therefore, under each of the FTU scenarios, there would be a potential need for 180 lodging units on or off base and 20 dormitory units on base to support the average daily student load of 200.

To determine the total dependents for each base associated with the KC-46A mission and KC-135 drawdown mission (where appropriate), 65 percent of all full-time military personnel, as identified in the personnel tables in Volume I, Chapter 2 (See Tables 2-4, 2-7, 2-10, 2-13, 2-16, 2-19), were assumed to be accompanied. Each accompanied military member was assumed to be accompanied by 2.5 dependents, or 1 spouse and approximately 1.5 children. All children were assumed to be of school age. Therefore, to determine the total number of school-aged children, a multiplier of 1.5 was applied to 65 percent of the full-time military personnel.

Public services were analyzed by considering the overall percentage change to the county population. Base services were analyzed by considering the capacity, staffing, and infrastructure available to support the incoming personnel.

The magnitude of potential impacts can vary greatly, depending on the location of the proposed action. If potential socioeconomic changes were to result in substantial shifts in population trends or a decrease in regional spending or earning patterns, those effects would be considered adverse. A proposed action could have a significant effect with respect to socioeconomic conditions in the surrounding ROI if the following were to occur:

- Change in the local business volume, employment, or population that exceeds the ROI's historical annual change
- Adverse change on social services or social conditions, including property values, school enrollment, county or municipal expenditures, or crime rates

## **B.11 ENVIRONMENTAL JUSTICE AND PROTECTION OF CHILDREN**

### **B.11.1 RESOURCE DEFINITION**

The resource considered for environmental justice is potentially affected populations that meet certain characteristics based on race, income, and age. The resource is defined relatively, in order to understand if impacts from an action are occurring in areas that are disproportionately composed of minorities, low-income persons, and children. This concern arises because large impact projects have historically used sites where real estate values are lower and/or more industrialized. Locations with low property values have tended to attract development of affordable and marginal housing. This dynamic tends to perpetuate and often pre-dates the enactment of community land use ordinances. The intent of environmental justice is to reduce the burden of impacts on socially and economically vulnerable populations.

### **B.11.2 REGULATORY SETTING**

*Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, EO 12898, directs Federal agencies to address environmental and human health conditions in minority and low-income communities. In addition to environmental justice issues are concerns pursuant to EO 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, which directs Federal agencies to identify and assess environmental health and safety risks that may disproportionately affect children.

USAF guidance for implementation of the EO is contained in the *Guide for Environmental Justice Analysis with the Environmental Impact Analysis Process*, dated November 1997 (CEQ 1997). Minority populations include all persons identified by the 2010 census to be of Hispanic origin, regardless of race, and all persons not of Hispanic origin other than White (i.e., non-Hispanic persons who are Black, American Indian, Eskimo or Aleut, Asian or Pacific Islander, or other race).

The 2010 census did not collect information on income or poverty levels. The latest information on poverty was released in 2012 as a 5-year average from 2007 to 2011 as part of the American Community Survey. Low-income populations include persons living below the poverty level. The poverty level or threshold varies by size of family and number of children under 18 years (i.e., \$23,021 for a family of four in 2011). If the total family income is less than the threshold, then the family and every individual in it (or unrelated individuals) is in poverty. The percentage of low-income persons is calculated as a percentage of all persons for whom the U.S. Census Bureau determines poverty status, which is generally a slightly lower number than the total population, as it excludes institutionalized persons, persons in military group quarters and in college dormitories, and unrelated individuals under 15 years old.

### **B.11.3      METHODOLOGY**

Analysis of environmental justice focuses on potentially unavoidable significant adverse impacts on any of the resource areas evaluated in this Final EIS. If no potentially significant impacts are identified, an evaluation of environmental justice is not triggered. Where potentially significant impacts are identified in the EIS, the percentages of low-income persons, minority persons, and children under 18 are calculated for the population of the affected area. These percentages are compared to those of the region of comparison to determine if the affected population is disproportionately composed of low-income persons, minority persons, and children under age 18 (i.e., higher than the region of comparison).

Since the proposed construction activities would occur within the base boundaries, the only action with the potential to cause adverse impacts is related to the new noise levels generated in the vicinity of each of the bases under consideration for the FTU or MOB 1 actions. Therefore, the ROI for the environmental justice analysis in this Final EIS uses the county as the region of comparison, and focuses on the demographics of specific affected populations for each of the bases evaluated. Should the analysis of impacts in the EIS conclude that a potentially unavoidable significant impact could occur, the composition of the affected population (i.e., percentages of low-income, minority, and children under age 18) is compared to the region (i.e., the county) to assess if the impact is borne disproportionately by minorities, low-income persons, or children.

For the purposes of this analysis, children are defined as persons age 17 and younger, as enumerated by the 2010 census. For the purposes of this analysis, the proportion of affected low-income population in the 2000 census is evaluated to the census tract level. That percentage is then applied to the affected 2010 population as an estimate of the number of low-income persons affected under the 2010 census. The proportion of affected minority and children under 18 in the 2000 census is evaluated to the census block level, and then applied to the affected 2010 population.

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## **PUBLIC DOCUMENTS**

UFC 3-260-01, Airfield and Heliport Planning and Design

### **Air Force**

Air Force Occupational Safety and Health Standard 48-20

### **Air Force Instructions**

AFI 32-1052 – Facility Asbestos Management

AFI 32-7042 – Solid and Hazardous Waste Compliance

AFI 32-7063 – Air Installation Compatible Use Zone Program

AFI 32-7064 – Integrated Natural Resources Management

AFI 32-7065 – Cultural Resources Management

AFI 32-7086 – Hazardous Material Management

### ***Code of Federal Regulations***

7 CFR 658 – Farmland Protection Policy Act

14 CFR 77 – Objects Affecting Navigable Airspace

29 CFR 1910.95 – Occupational Noise Exposure

30 CFR 320-330, Section 404

30 CFR 329, Section 10 – Rivers and Harbors Act

33 CFR 328.3 – Definition of Waters of the United States

36 CFR 60.4 – National Register of Historic Places

36 CFR 63 – Determinations of Eligibility for Inclusion in the National Register

36 CFR 79 – Curation of Federally Owned and Administered Archaeological Collections

36 CFR 800 – Protection of Historic Properties

36 CFR 800.16(d) – Definition of Area of potential effects

40 CFR 61 – National Emission Standards for Hazardous Air Pollutants

40 CFR 93, Subpart B – Determining Conformity of General Federal Actions to State or Federal Implementation Plans

40 CFR 112 – Oil Pollution Prevention

40 CFR 225.1 to 233.71 – Ocean Dumping

40 CFR 261 – EPA Regulation on Identification and Listing of Hazardous Waste

40 CFR 279 – EPA Regulation on Standards for the Management of Used Oil

40 CFR 302 – EPA Regulation on Designation, Reportable Quantities, and Notification

40 CFR Parts 700-766 – Toxic Substances Control Act of 1976

40 CFR 1508.27(b) – Council on Environmental Quality

43 CFR 7 – Protection of Archaeological Resources

### **Department of Defense Instructions**

DoDI 4165.57 – AICUZ, Ground Obstructions

DoDI 4710.02 – DoD Interactions with Federally-Recognized Tribes

DoDI 4715.16 – Cultural Resources Management

DoDI 6055.12 – Occupational Noise and Hearing Conservation Program

### **Executive Orders**

EO 11593, Protection and Enhancement of the Cultural Environment

EO 11990, Protection of Wetlands

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations

EO 13007, Indian Sacred Sites

EO 13045, Protection of Children from Environmental Health Risks and Safety Risks

EO 13175, Consultation and Coordination with Indian Tribal Governments

EO 13287, Preserve America

EO 13514, Federal Leadership in Environmental, Energy, and Economic Performance

### ***United States Code***

15 U.S.C. 2651, Asbestos Hazard Emergency Response Act of 1986

16 U.S.C. 668 – 668d, Bald and Golden Eagle Protection Act of 1940

16 U.S.C. 703 – 712, Migratory Bird Treaty Act of 1918

16 U.S.C. 1536, Endangered Species Act of 1973

33 U.S.C. 1251 et seq., Clean Water Act of 1977

42 U.S.C. 6901, Resource Conservation and Recovery Act of 1976

42 U.S.C. 7506(c) Transportation Conformity of the Clean Air Act

42 U.S.C. 9601-9675, Comprehensive Environmental Response, Compensation, and Liability Act of 1980 as amended by the Superfund Amendments and Reauthorization Act of 1986

42 U.S.C. 9620, Community Environmental Response Facilitation Act of 1992

42 U.S.C. 11001-11050, Emergency Planning and Community Right-to-Know Act of 1986

# APPENDIX C

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## BACKGROUND INFORMATION FOR THE NOISE ANALYSIS





## **APPENDIX C BACKGROUND INFORMATION FOR THE NOISE ANALYSIS**

This appendix provides a general noise primer to educate the reader on what constitutes noise, how it is measured, and the studies that were used in support of how and why noise is modeled.

Noise is generally described as unwanted sound. Unwanted sound can be based on objective effects (such as hearing loss or damage to structures) or subjective judgments (community annoyance). Noise analysis thus requires a combination of physical measurement of sound, physical and physiological effects, plus psycho- and socio-acoustic effects.

This appendix describes how sound is measured and summarizes noise impacts in terms of community acceptability and land use compatibility; gives detailed descriptions of the effects of noise that lead to the impact guidelines presented; and provides a description of the specific methods used to predict aircraft noise, including a detailed description of sonic booms.

### **C.1 NOISE DESCRIPTORS AND IMPACT**

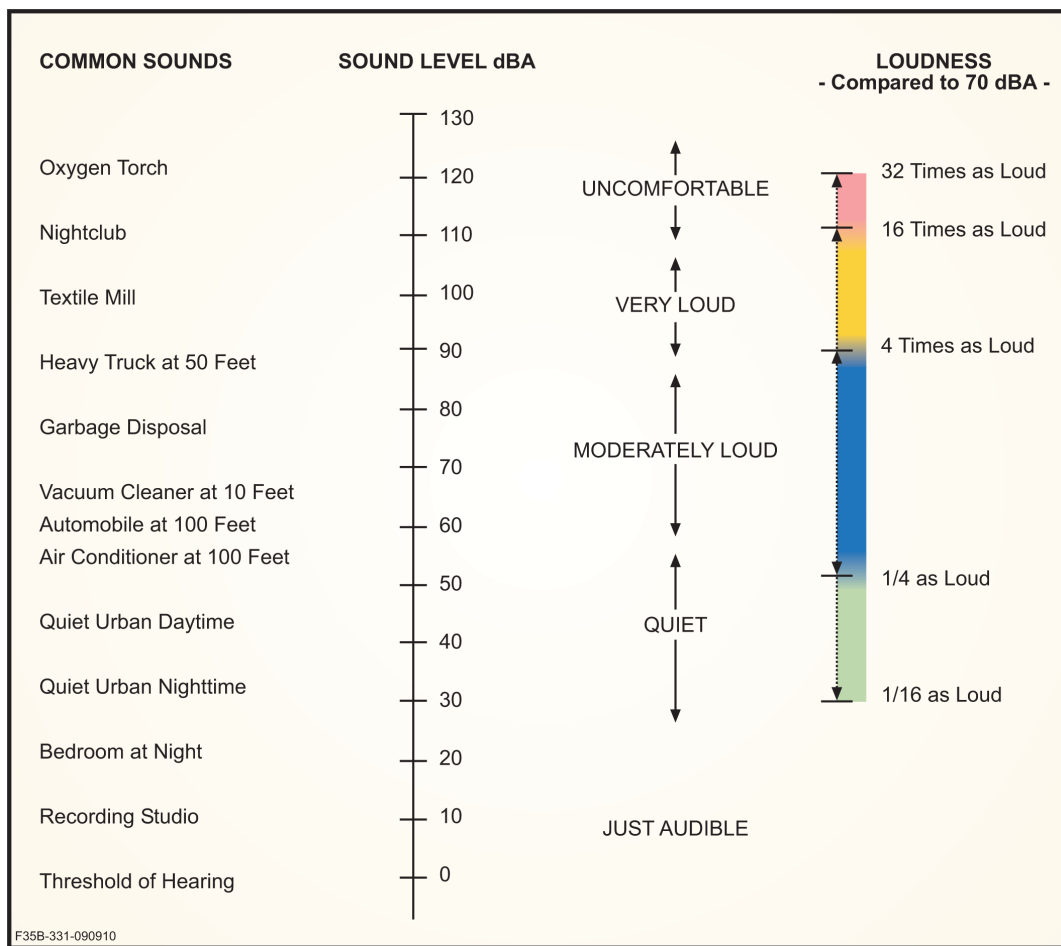
The following subsections describe the characteristics used to describe sound, the specific noise metrics used for noise impact analysis, and how environmental impact and land use compatibility are judged in terms of these quantities.

#### **C.1.1 QUANTIFYING SOUND**

Measurement and perception of sound involve two basic physical characteristics: amplitude and frequency. Amplitude is a measure of the strength of the sound and is directly measured in terms of the pressure of a sound wave. Because sound pressure varies in time, various types of pressure averages are usually used. Frequency, commonly perceived as pitch, is the number of times per second the sound causes air molecules to oscillate. Frequency is measured in units of cycles per second, or hertz (Hz).

**Amplitude.** The loudest sounds the human ear can comfortably hear have acoustic energy one trillion times the acoustic energy of sounds the ear can barely detect. Because of this vast range, attempts to represent sound amplitude by pressure are generally unwieldy. Sound is, therefore, usually represented on a logarithmic scale with a unit called the decibel (dB). Sound measured on the decibel scale is referred to as a sound level. The threshold of human hearing is approximately 0 dB, and the threshold of discomfort or pain is around 120 dB.

Figure C-1 is a chart of A-weighted sound levels from typical sounds. Some (air conditioner, vacuum cleaner) are continuous sounds whose levels are constant for some time. Some (automobile, heavy truck) are the maximum sound during a vehicle passby. Some (urban daytime, urban nighttime) are averages over some extended period.



Source: Derived from the Handbook of Noise Control, Harris 1979, FICAN 1997.

**Figure C-1. Typical A-Weighted Sound Levels of Common Sounds**

Because of the logarithmic nature of the decibel scale, sounds levels do not add and subtract directly and are somewhat cumbersome to handle mathematically. However, some simple rules of thumb are useful in dealing with sound levels. First, if a sound's intensity is doubled, the sound level increases by 3 dB, regardless of the initial sound level. For example:

60 dB + 60 dB = 63 dB, and

80 dB + 80 dB = 83 dB.

The total sound level produced by two sounds of different levels is usually only slightly more than the higher of the two. For example:

60.0 dB + 70.0 dB = 70.4 dB.

Because the addition of sound levels behaves differently than that of ordinary numbers, such addition is often referred to as "decibel addition" or "energy addition." The latter term arises from the fact that the combination of decibel values consists of first converting each decibel value to its corresponding acoustic energy, then adding the energies using the normal rules of addition, and finally converting the total energy back to its decibel equivalent.

The difference in decibels between two sounds represents the ratio of the amplitudes of those two sounds. Because human senses tend to be proportional (i.e., detect whether one sound is

twice as big as another) rather than absolute (i.e., detect whether one sound is a given number of pressure units bigger than another), the decibel scale correlates well with human response.

Under laboratory conditions, differences in sound level of 1 dB can be detected by the human ear. In the community, the smallest change in average noise level that can be detected is about 3 dB. A change in sound level of about 10 dB is usually perceived by the average person as a doubling (or halving) of the sound's loudness, and this relation holds true for loud sounds and for quieter sounds. A decrease in sound level of 10 dB actually represents a 90 percent decrease in sound *intensity* but only a 50 percent decrease in perceived *loudness* because of the nonlinear response of the human ear (similar to most human senses).

The one exception to the exclusive use of levels, rather than physical pressure units, to quantify sound is in the case of sonic booms. Sonic booms are coherent waves with specific characteristics. There is a long-standing tradition of describing individual sonic booms by the amplitude of the shock waves, in pounds per square foot. This is particularly relevant when assessing structural effects as opposed to loudness or cumulative community response. In this environmental analysis, sonic booms are quantified by either decibels or pounds per square foot, as appropriate for the particular impact being assessed.

**Frequency.** The normal human ear can hear frequencies from about 20 Hz to about 20,000 Hz. It is most sensitive to sounds in the 1,000 to 4,000 Hz range. When measuring community response to noise, it is common to adjust the frequency content of the measured sound to correspond to the frequency sensitivity of the human ear. This adjustment is called A-weighting (ANSI 1988). Sound levels that have been so adjusted are referred to as A-weighted sound levels.

The audible quality of high-thrust engines in modern military combat aircraft can be somewhat different than other aircraft, including (at high throttle settings) the characteristic nonlinear crackle of high-thrust engines. The spectral characteristics of various noises are accounted for by A-weighting, which approximates the response of the human ear but does not necessarily account for quality. There are other, more detailed, weighting factors that have been applied to sounds. In the 1950s and 1960s, when noise from civilian jet aircraft became an issue, substantial research was performed to determine what characteristics of jet noise were a problem. The metrics Perceived Noise Level and Effective Perceived Noise Level were developed. These accounted for nonlinear behavior of hearing and the importance of low frequencies at high levels, and for many years airport/airbase noise contours were presented in terms of Noise Exposure Forecast, which was based on Perceived Noise Level and Effective Perceived Noise Level. In the 1970s, however, it was realized that the primary intrusive aspect of aircraft noise was the high noise level, a factor that is well represented by A-weighted levels and day-night average sound level (DNL). The refinement of Perceived Noise Level, Effective Perceived Noise Level, and Noise Exposure Forecast was not significant in protecting the public from noise.

There has been continuing research on noise metrics and the importance of sound quality, sponsored by the U.S. Department of Defense (DoD) for military aircraft noise and by the Federal Aviation Administration (FAA) for civil aircraft noise. The metric  $L_{dnmr}$ , which is described later and accounts for the increased annoyance of rapid onset rate of sound, is a product of this long-term research.

The amplitude of A-weighted sound levels is measured in decibels. It is common for some noise analysts to denote the unit of A-weighted sounds by dBA. As long as the use of A-weighting is understood, there is no difference between dB or dBA: it is only important that the use of A-weighting be made clear. In this environmental analysis, A-weighted sound levels are reported as dB.

**Time Averaging.** Sound pressure of a continuous sound varies greatly with time, so it is customary to deal with sound levels that represent averages over time. Levels presented as instantaneous (i.e., as might be read from the display of a sound level meter) are based on averages of sound energy over either 1/8 second (fast) or 1 second (slow). The formal definitions of fast and slow levels are somewhat complex, with details that are important to the makers and users of instrumentation. They may, however, be thought of as levels corresponding to the root mean square sound pressure measured over the 1/8-second or 1-second periods.

## C.1.2 NOISE METRICS

### C.1.2.1 Sound Exposure Level

Individual time-varying noise events have two main characteristics: a sound level that changes throughout the event and a period of time during which the event is heard. Although the maximum sound level reached during the event provides some measure of the intrusiveness of the event, it alone does not completely describe the total event. The period of time during which the sound is heard is also significant. The Sound Exposure Level (abbreviated SEL or  $L_{AE}$  for A-weighted sounds) combines both of these characteristics into a single metric.

SEL is a composite metric that represents both the intensity of a sound and its duration. Mathematically, the mean square sound pressure is computed over the duration of the event, then multiplied by the duration in seconds, and the resultant product is turned into a sound level. It does not directly represent the sound level heard at any given time, but rather provides a measure of the net impact of the entire acoustic event. Table C-1 shows SEL values corresponding to representative aircraft in the specified power settings and aircraft configurations.

**Table C-1. Representative Sound Exposure Levels**

Aircraft (engine type)	Power Setting	Power Unit	SEL Values (in dBA) At Varying Distances (in feet)				
			500	1,000	2,000	5,000	10,000
Takeoff/Departure Operations (at 300 knots airspeed)							
A-10A	6200	NF	102.6	96.2	88.5	76.9	68.3
B-1	97.5%	RPM	129.5	123.1	116.5	107.3	99.3
F-15 (P220)	90%	NC	117.3	112	106.1	97	88.4
F-16 (P229)	93%	NC	116.5	110.8	104.6	95	86.3
F-22	100%	ETR	124.2	118.7	112.7	103.5	95.2
Landing/Arrival Operations (at 160 knots airspeed)							
A-10A	5225	NF	97.9	91.5	83.3	67	55
B-1	90%	RPM	103.4	98.3	92.7	83.4	74.4
F-15 (P220)	75%	NC	94.2	89.2	83.6	74.9	66.9
F-16 (P229)	83.5%	NC	97.4	92.1	86.3	76.9	68.2
F-22	43%	ETR	114.9	109.3	103.1	93.5	84.5

**Key:** Engine Units of Power: ETR = engine thrust ratio; NC = engine core revolutions per minute; NF = engine fan revolutions per minute; RPM = revolutions per minute

**Source:** SELCalc2 (Flyover Noise Calculator), Using NoiseMap 6/7 and Maximum Omega10 Result as the defaults.

### **C.1.2.2 Day-Night Average Sound Level**

Noise tends to be more intrusive at night than during the day. This effect is accounted for by applying a 10 dB penalty to events that occur after 10:00 P.M. and before 7:00 A.M. If the equivalent continuous sound pressure level ( $L_{eq}$ ) is computed over a 24-hour period with this nighttime penalty applied, the result is the DNL. DNL is the community noise metric recommended by the U.S. Environmental Protection Agency (USEPA) (USEPA 1974) and has been adopted by most Federal agencies (FICON 1992). It has been well established that DNL correlates well with long-term community response to noise (Finegold et al. 1994; Schultz 1978).

DNL accounts for the total, or cumulative, noise impact at a given location, and for this reason is often referred to as a “cumulative” metric. It was noted earlier that, for impulsive sounds, such as sonic booms, C-weighting is more appropriate than A-weighting. DNL computed with C-weighting is denoted CDNL or  $L_{Cdn}$ . This procedure has been standardized, and impact interpretive criteria similar to those for DNL have been developed (CHABA 1981).

### **C.1.2.3 Onset-Adjusted Monthly Day-Night Average Sound Level**

Aircraft operations in military training airspace generate a noise environment somewhat different from other community noise environments. Overflights are sporadic, occurring at random times and varying from day to day and week to week. This situation differs from most community noise environments, in which noise tends to be continuous or patterned. Individual military overflight events also differ from typical community noise events in that noise from a low-altitude, high-air-speed flyover can have a rather sudden onset.

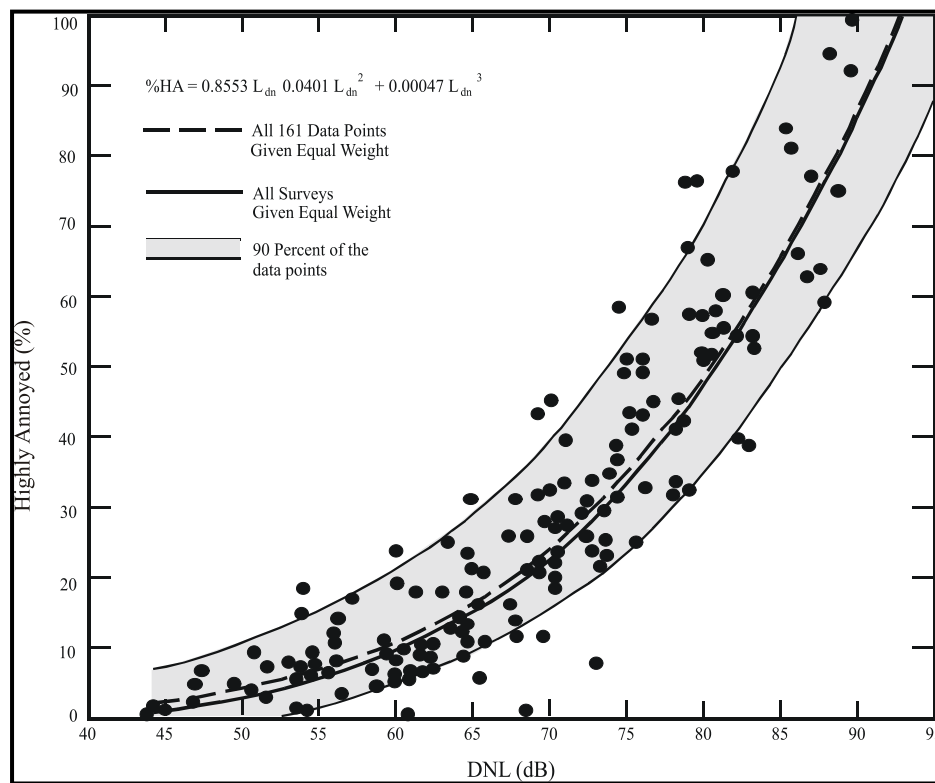
To represent these differences, the conventional DNL metric is adjusted to account for the “surprise” effect of the sudden onset of aircraft noise events on humans (Plotkin et al. 1987; Stusnick et al. 1992, 1993). For aircraft exhibiting a rate of increase in sound level (called onset rate) of from 15 to 150 dB per second, an adjustment or penalty ranging from 0 to 11 dB is added to the normal SEL. Onset rates above 150 dB per second require an 11 dB penalty, while onset rates below 15 dB per second require no adjustment. The DNL is then determined in the same manner as for conventional aircraft noise events and is designated as onset-rate adjusted day-night average sound level (abbreviated  $L_{dnmr}$ ).

Because of the irregular occurrences of aircraft operations, the number of average daily operations is determined by using the calendar month with the highest number of operations. The monthly average is denoted  $L_{dnmr}$ . Noise levels are calculated the same way for both DNL and  $L_{dnmr}$ .  $L_{dnmr}$  is interpreted by the same criteria as used for DNL.

## **C.1.3 NOISE IMPACT**

### **C.1.3.1 Community Reaction**

Studies of long-term community annoyance to numerous types of environmental noise show that DNL correlates well with the annoyance. Schultz (1978) showed a consistent relationship between DNL and annoyance. Schultz’s original curve fit (Figure C-2) shows that there is a remarkable consistency in results of attitudinal surveys which relate the percentages of groups of people who express various degrees of annoyance when exposed to different DNL.



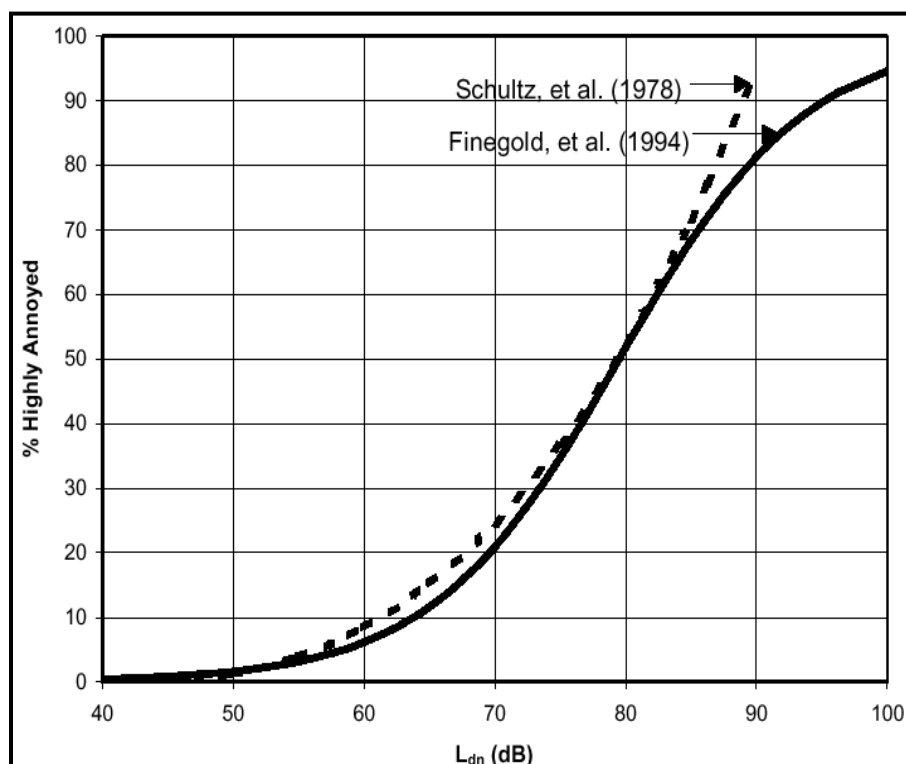
Source: Schultz 1978.

**Figure C-2. Community Surveys of Noise Annoyance**

Another study reaffirmed this relationship (Fidell et al. 1989). Figure C-3 shows an updated form of the curve fit (Finegold et al. 1994) in comparison with the original. The updated fit, which does not differ substantially from the original, is the current preferred form. In general, correlation coefficients of 0.85 to 0.95 are found between the percentages of groups of people highly annoyed and the level of average noise exposure. The correlation coefficients for the annoyance of individuals are relatively low, however, on the order of 0.5 or less. This is not surprising, considering the varying personal factors that influence the manner in which individuals react to noise. For example, individuals with autism are often very strongly affected by sudden noises (Tang et al. 2002). Persons with autism often report experiencing oversensitivity to noise and are often particularly sensitive to high-pitched or sudden onset noises (Grandin 1991). Nevertheless, findings substantiate that community annoyance to aircraft noise is represented quite reliably using DNL.

As noted earlier for SEL, DNL does not represent the sound level heard at any particular time, but rather represents the total sound exposure. DNL accounts for the sound level of individual noise events, the duration of those events, and the number of events. Its use is endorsed by the scientific community (ANSI 1980, 1988, 2005; FICON 1992; FICUN 1980; USEPA 1974).

While DNL is the best metric for quantitatively assessing cumulative noise impact, it does not lend itself to intuitive interpretation by non-experts. Accordingly, it is common for environmental noise analyses to include other metrics for illustrative purposes. A general indication of the noise environment can be presented by noting the maximum sound levels that can occur and the number of times per day noise events will be loud enough to be heard. Use of other metrics as supplements to DNL has been endorsed by Federal agencies (FICON 1992).



**Figure C-3. Response of Communities to Noise; Comparison of Original (Schultz 1978) and Current (Finegold et al. 1994) Curve Fits**

The Schultz curve is generally applied to annual average DNL.  $L_{dnmr}$  was previously described and presented as being appropriate for quantifying noise in military airspace. The Schultz curve is used with  $L_{dnmr}$  as the noise metric.  $L_{dnmr}$  is always equal to or greater than DNL, so impact is generally higher than would have been predicted if the onset rate and busiest-month adjustments were not accounted for.

There are several points of interest in the noise-annoyance relation. The first is DNL of 65 dB. This is a level most commonly used for noise planning purposes and represents a compromise between community impact and the need for activities like aviation, which do cause noise. Areas exposed to DNL above 65 dB are generally not considered suitable for residential use. The second is DNL of 55 dB, which was identified by USEPA as a level "...requisite to protect the public health and welfare with an adequate margin of safety" (USEPA 1974), which is essentially a level below which adverse impact is not expected. The third is DNL of 75 dB. This is the lowest level at which adverse health effects could be credible (USEPA 1974). The very high annoyance levels correlated with DNL of 75 dB make such areas unsuitable for residential land use. Table C-2 shows the relation between annoyance and DNL.

**Table C-2. Relation Between Annoyance and DNL**

dB DNL	Percent (%) Highly Annoyed
45	0.83
50	1.66
55	3.31
60	6.48
65	12.29
70	22.10

### C.1.3.2 Land Use Compatibility

As noted above, the inherent variability between individuals makes it impossible to predict accurately how any individual will react to a given noise event. Nevertheless, when a community is considered as a whole, its overall reaction to noise can be represented with a high degree of confidence. As described above, the best noise exposure metric for this correlation is the DNL or  $L_{dnmr}$  for military overflights.

In June 1980, an ad hoc Federal Interagency Committee on Urban Noise (FICUN) published guidelines (FICUN 1980) relating DNL to compatible land uses. This committee was composed of representatives from DoD, the U.S. Department of Transportation, the U.S. Department of Housing and Urban Development, USEPA, and the Veterans Administration. Since the issuance of these guidelines, Federal agencies have generally adopted these guidelines for their noise analyses.

Following the lead of the committee, DoD and FAA adopted the concept of land use compatibility as the accepted measure of aircraft noise effect. The FAA included the committee's guidelines in the Federal Aviation Regulations (DOT 1984). These guidelines are reprinted in Table C-3, along with the explanatory notes included in the regulation. Although these guidelines are not mandatory (note the footnote “\*” in the table), they provide the best means for determining noise impact in airport communities. In general, residential land uses normally are not compatible with outdoor DNL values above 65 dB, and the extent of land areas and populations exposed to DNL of 65 dB and higher provides the best means for assessing the noise impacts of alternative aircraft actions. In some cases a change in noise level, rather than an absolute threshold, may be a more appropriate measure of impact.

**Table C-3. Land Use Compatibility, Noise Exposure, and Accident Potential**

Land Use		Accident Potential Zones			Noise Zones			
SLUCM No.	Name	Clear Zone	APZ I	APZ II	65–69 dB	70–74 dB	75–79 dB	80+ dB
10	<b>Residential</b>							
11	Household units							
11.11	Single units; detached	N	N	$Y^a$	$A^k$	$B^k$	N	N
11.12	Single units; semidetached	N	N	N	$A^k$	$B^k$	N	N
11.13	Single units; attached row	N	N	N	$A^k$	$B^k$	N	N
11.21	Two units; side-by-side	N	N	N	$A^k$	$B^k$	N	N
11.22	Two units; one above the other	N	N	N	$A^k$	$B^k$	N	N
11.31	Apartments; walk up	N	N	N	$A^k$	$B^k$	N	N
11.32	Apartments; elevator	N	N	N	$A^k$	$B^k$	N	N
12	Group quarters	N	N	N	$A^k$	$B^k$	N	N
13	Residential hotels	N	N	N	$A^k$	$B^k$	N	N
14	Mobile home parks or courts	N	N	N	N	N	N	N
15	Transient lodgings	N	N	N	$A^k$	$B^k$	$C^k$	N
16	Other residential	N	N	$N^a$	$A^k$	$B^k$	N	N
20	<b>Manufacturing</b>							
21	Food and kindred products; manufacturing	N	$N^b$	Y	Y	$Y^l$	$Y^m$	$Y^n$
22	Textile mill products; manufacturing	N	$N^b$	Y	Y	$Y^l$	$Y^m$	$Y^n$
23	Apparel and other finished products made from fabrics, leather, and similar materials; manufacturing	N	N	$N^b$	Y	$Y^l$	$Y^m$	$Y^n$

**Table C-3. Land Use Compatibility, Noise Exposure, and Accident Potential (Continued)**

Land Use		Accident Potential Zones			Noise Zones			
SLUCM No.	Name	Clear Zone	APZ I	APZ II	65-69 dB	70-74 dB	75-79 dB	80+ dB
24	Lumber and wood products (except furniture); manufacturing	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
25	Furniture and fixtures; manufacturing	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
26	Paper and allied products; manufacturing	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
27	Printing, publishing, and allied industries	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
28	Chemicals and allied products; manufacturing	N	N	N <sup>b</sup>	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
29	Petroleum refining and related industries	N	N	N	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
30	<b>Manufacturing</b>							
31	Rubber and misc. plastic products; manufacturing	N	N <sup>b</sup>	N <sup>b</sup>	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
32	Stone, clay and glass products; manufacturing	N	N <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
33	Primary metal industries	N	N <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
34	Fabricated metal products; manufacturing	N	N <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
35	Professional, scientific, and controlling instruments; photographic and optical goods; watches and clocks; manufacturing	N	N	N <sup>b</sup>	Y	A	B	N
39	Miscellaneous manufacturing	N	Y <sup>b</sup>	Y <sup>b</sup>	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
40	<b>Transportation, Communications, and Utilities</b>							
41	Railroad, rapid rail transit, and street railroad transportation	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
42	Motor vehicle transportation	N <sup>c</sup>	Y	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
43	Aircraft transportation	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
44	Marine craft transportation	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
45	Highway and street right-of-way	N <sup>c</sup>	Y	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
46	Automobile parking	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
47	Communications	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	A <sup>o</sup>	B <sup>o</sup>	N
48	Utilities	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>
49	Other transportation communications and utilities	N <sup>c</sup>	Y <sup>d</sup>	Y	Y	A <sup>o</sup>	B <sup>o</sup>	N
50	<b>Trade</b>							
51	Wholesale trade	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
52	Retail trade-building materials, hardware and farm equipment	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
53	Retail trade-general merchandise	N <sup>b</sup>	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
54	Retail trade-food	N <sup>b</sup>	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
55	Retail trade-automotive, marine craft, aircraft and accessories	N <sup>b</sup>	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
56	Retail trade-apparel and accessories	N <sup>b</sup>	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
57	Retail trade-furniture, home furnishings and equipment	N <sup>b</sup>	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
58	Retail trade-eating and drinking establishments	N	N	N <sup>b</sup>	Y	A	B	N
59	Other retail trade	N	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
60	<b>Services</b>							
61	Finance, insurance, and real estate services	N	N	Y <sup>f</sup>	Y	A	B	N
62	Personal services	N	N	Y <sup>f</sup>	Y	A	B	N

**Table C-3. Land Use Compatibility, Noise Exposure, and Accident Potential (Continued)**

Land Use		Accident Potential Zones			Noise Zones			
SLUCM No.	Name	Clear Zone	APZ I	APZ II	65-69 dB	70-74 dB	75-79 dB	80+ dB
62.4	Cemeteries	N	Y <sup>g</sup>	Y <sup>g</sup>	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n,b,a</sup>
63	Business services	N	Y <sup>h</sup>	Y <sup>h</sup>	Y	A	B	N
64	Repair services	N	Y <sup>b</sup>	Y	Y	Y <sup>l</sup>	Y <sup>m</sup>	Y <sup>n</sup>
65	Professional services	N	N	Y <sup>f</sup>	Y	A	B	N
65.1	Hospitals, nursing homes	N	N	N	A*	B*	N	N
65.1	Other medical facilities	N	N	N	Y	A	B	N
66	Contract construction services	N	Y <sup>f</sup>	Y	Y	A	B	N
67	Governmental services	N <sup>f</sup>	N	Y <sup>f</sup>	Y*	A*	B*	N
68	Educational services	N	N	N	A*	B*	N	N
69	Miscellaneous services	N	N <sup>b</sup>	Y <sup>b</sup>	Y	A	B	N
70	<b>Cultural, Entertainment and Recreational</b>							
71	Cultural activities (including churches)	N	N	N <sup>b</sup>	A*	B*	N	N
71.2	Nature exhibits	N	Y <sup>b</sup>	Y	Y*	N	N	N
72	Public assembly	N	N	N	Y	N	N	N
72.1	Auditoriums, concert halls	N	N	N	A	B	N	N
72.11	Outdoor music shell, amphitheatres	N	N	N	N	N	N	N
72.2	Outdoor sports arenas, spectator sports	N	N	N	Y <sup>q</sup>	Y <sup>q</sup>	N	N
73	Amusements	N	N	Y <sup>h</sup>	Y	Y	N	N
74	Recreational activities (including golf courses, riding stables, water recreation)	N	Y <sup>h,i,j</sup>	Y	Y*	A*	B*	N
75	Resorts and group camps	N	N	N	Y*	Y*	N	N
76	Parks	N	Y <sup>h</sup>	Y <sup>h</sup>	Y*	Y*	N	N
79	Other cultural, entertainment, and recreation	N <sup>i</sup>	Y <sup>i</sup>	Y <sup>i</sup>	Y*	Y*	N	N
80	<b>Resources Production and Extraction</b>							
81	Agriculture (except livestock)	Y <sup>p</sup>	Y	Y	Y <sup>r</sup>	Y <sup>s</sup>	Y <sup>t</sup>	Y <sup>t,u</sup>
81.5 to 81.7	Livestock farming and animal breeding	N	Y	Y	Y <sup>r</sup>	Y <sup>s</sup>	Y <sup>t</sup>	Y <sup>t,u</sup>
82	Agricultural-related activities	N	Y <sup>e</sup>	Y	Y <sup>r</sup>	Y <sup>s</sup>	N	N
83	Forestry activities and related services	N <sup>e</sup>	Y	Y	Y <sup>r</sup>	Y <sup>s</sup>	Y <sup>t</sup>	Y <sup>t,u</sup>
84	Fishing activities and related services	N <sup>e</sup>	Y <sup>e</sup>	Y	Y	Y	Y	Y
85	Mining activities and related services	N	Y <sup>e</sup>	Y	Y	Y	Y	Y
89	Other resources production and extraction	N	Y <sup>e</sup>	Y	Y	Y	Y	Y

<sup>a</sup> Suggested maximum density of 1–2 dwelling units per acre possibly increased under a Planned Unit Development where maximum lot coverage is less than 20 percent.

<sup>b</sup> Within each land use category, uses exist where further definition may be needed due to the variation of densities in people and structures. Shopping malls and shopping centers are considered incompatible in any accident potential zone (APZ).

<sup>c</sup> The placing of structures, buildings, or aboveground utility lines in the clear zone is subject to severe restrictions. In a majority of the clear zones, these items are prohibited. See Air Force Instruction (AFI) 32-7063 and Air Force Manual (AFMAN) 32-1123 for specific guidance.

<sup>d</sup> No passenger terminals and no major aboveground transmission lines in APZ I.

<sup>e</sup> Factors to be considered: labor intensity, structural coverage, explosive characteristics, and air pollution.

<sup>f</sup> Low-intensity office uses only. Meeting places, auditoriums, etc., are not recommended.

<sup>g</sup> Excludes chapels.

<sup>h</sup> Facilities must be low intensity.

<sup>i</sup> Clubhouse not recommended.

<sup>j</sup> Areas for gatherings of people are not recommended.

<sup>k</sup> Footnote *k* as applied to noise level reduction (NLR) designation A: Although local conditions may require residential use, it is discouraged in DNL 65–69 dB and strongly discouraged in DNL 70–74 dB. An evaluation should be conducted prior to approvals, indicating that a demonstrated community need for residential use would not be met if development were prohibited in these zones, and that there are no viable alternative locations.

Footnote *k* as applied to NLR designation B: Where the community determines the residential uses must be allowed, measures to achieve outdoor to indoor NLR for DNL 65–69 dB and DNL 70–74 dB should be incorporated into building codes and considered in individual approvals.

Footnote *k* as applied to NLR designation C: NLR criteria will not eliminate outdoor noise problems. However, building location and site planning and design and use of berms and barriers can help mitigate outdoor exposure, particularly from near ground-level sources. Measures that reduce outdoor noise should be used whenever practical in preference to measures that only protect interior spaces.

<sup>l</sup> Measures to achieve the same NLR as required for facilities in the DNL 65–69 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>m</sup> Measures to achieve the same NLR as required for facilities in the DNL 70–74 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>n</sup> Measures to achieve the same NLR as required for facilities in the DNL 75–79 dB range must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise-sensitive areas, or where the normal noise level is low.

<sup>o</sup> If noise-sensitive, use indicated NLR; if not, the use is compatible.

<sup>p</sup> No buildings.

<sup>q</sup> Land use is compatible provided special sound reinforcement systems are installed.

<sup>r</sup> Residential buildings require the same NLR required for facilities in the DNL 65–69 dB range.

<sup>s</sup> Residential buildings require the same NLR required for facilities in the DNL 70–74 dB range.

<sup>t</sup> Residential buildings are not permitted.

<sup>u</sup> Land use is not recommended. If the community decides the use is necessary, hearing protection devices should be worn by personnel.

**Key:** SLUCM = Standard Land Use Coding Manual, U.S. Department of Transportation; Y = Yes; land use and related structures are compatible without restriction; N = No; land use and related structures are not compatible and should be prohibited; A, B, or C = Land use and related structures generally compatible; measures to achieve noise level reduction of A (25 dB), B (30 dB), or C (35 dB) should be incorporated into the design and construction of structures; A\*, B\*, or C\* = Land use generally compatible with noise level reduction. However, measures to achieve an overall noise level reduction do not necessarily solve noise difficulties and additional evaluation is warranted. See appropriate footnotes; \* = The designation of these uses as “compatible” in this zone reflects individual Federal agency and program consideration of general cost and feasibility factors, as well as past community experiences and program objectives. Localities, when evaluating the application of these guidelines to specific situations, may have different concerns or goals to consider.

## C.2 NOISE EFFECTS

The discussion in the previous section presented the global effect of noise on communities. The following sections describe particular noise effects. These effects include non-auditory health effects, annoyance, speech interference, sleep disturbance, noise-induced hearing impairment, noise effects on animals and wildlife, noise effects on property values, and noise effects on structures, terrain, and cultural resources.

### C.2.1 ANNOYANCE

The primary effect of aircraft noise on exposed communities is one of annoyance. Noise annoyance is defined by the USEPA as any negative subjective reaction on the part of an individual or group (USEPA 1974). As noted in the discussion of DNL above, community annoyance is best measured by that metric.

Because the USEPA Levels Document (USEPA 1974) identified DNL of 55 dB as “. . . requisite to protect public health and welfare with an adequate margin of safety,” it is commonly assumed that 55 dB should be adopted as a criterion for community noise analysis. From a noise exposure perspective, that would be an ideal selection. However, financial resources are generally not available to achieve that goal. Most agencies have identified DNL of 65 dB as a criterion that protects those most impacted by noise, and that can often be achieved on a practical basis (FICON 1992). This corresponds to about 12 percent of the exposed population being highly annoyed.

Although DNL of 65 dB is widely used as a benchmark for significant noise impact, and is often an acceptable compromise, it is not a statutory limit, and it is appropriate to consider other

thresholds in particular cases. Local ordinances and regulations have been adopted by many municipal governments to prevent civilian development near military installations that would be incompatible with noise generated by military operations. The decision to adopt such measures, and the specific content of the ordinances and regulations, is up to the municipal government. In many cases, the 65 dB DNL noise contour line is adopted as the threshold level above which land use restrictions are invoked.

### **C.2.2 SPEECH INTERFERENCE**

Speech interference associated with aircraft noise is a primary cause of annoyance to individuals on the ground. The disruption of routine activities such as radio or television listening, telephone use, or family conversation gives rise to frustration and irritation. The quality of speech communication is also important in classrooms, offices, and industrial settings and can cause fatigue and vocal strain in those who attempt to communicate over the noise. Speech is an acoustic signal characterized by rapid fluctuations in sound level and frequency pattern. It is essential for optimum speech intelligibility to recognize these continually shifting sound patterns. Not only does noise diminish the ability to perceive the auditory signal, but it also reduces a listener's ability to follow the pattern of signal fluctuation. In general, interference with speech communication occurs when intrusive noise exceeds about 60 dB (FICON 1992).

Indoor speech interference can be expressed as a percentage of sentence intelligibility among two people speaking in relaxed conversation approximately 3 feet apart in a typical living room or bedroom (USEPA 1974). The percentage of sentence intelligibility is a non-linear function of the (steady) indoor background A-weighted sound level. Such a curve-fit yields 100 percent sentence intelligibility for background levels below 57 dB and yields less than 10 percent intelligibility for background levels above 73 dB. The function is especially sensitive to changes in sound level between 65 dB and 75 dB. As an example of the sensitivity, a 1 dB increase in background sound level from 70 dB to 71 dB yields a 14 percent decrease in sentence intelligibility. The sensitivity of speech interference to noise at 65 dB and above is consistent with the criterion of DNL 65 dB generally taken from the Schultz curve. This is consistent with the observation that speech interference is the primary cause of annoyance.

**Classroom Criteria.** The effect of aircraft noise on children is a controversial area. Certain studies indicate that, in certain situations, children are potentially more sensitive to noise compared to adults. For example, adults average roughly 10 percent better than young children on speech intelligibility tests in high-noise environments (ASA 2000). Some studies indicate that noise negatively impacts classroom learning (e.g., Shield and Dockrell 2008).

In response to noise-specific and other environmental studies, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997), requires Federal agencies to ensure that their policies, programs, and activities address environmental health and safety risks and to identify any disproportionate risks to children. While the issue of noise impacts on children's learning is not fully settled, in May 2009, the American National Standards Institute (ANSI) published a classroom acoustics standard entitled "Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools" (ANSI 2002). At present, complying with the standard is voluntary in most locations. Essentially, the criteria states that when the noisiest hour is dominated by noise from such sources as aircraft, the limits for most classrooms are an hourly average A-weighted sound level of 40 dB, and the A-weighted sound level must not exceed 40 dB for more than 10 percent of the hour. For schools located near airfields, indoor noise levels would have to be lowered by 35–45 dBA relative to outdoor levels (ANSI 2009).

### **C.2.3 SLEEP DISTURBANCE**

Sleep disturbance is another source of annoyance associated with aircraft noise. This is especially true because of the intermittent nature and content of aircraft noise, which is more disturbing than continuous noise of equal energy and neutral meaning.

Sleep disturbance may be measured in either of two ways. “Arousal” represents actual awakening from sleep, while a change in “sleep stage” represents a shift from one of four sleep stages to another stage of lighter sleep without actual awakening. In general, arousal requires a somewhat higher noise level than does a change in sleep stage.

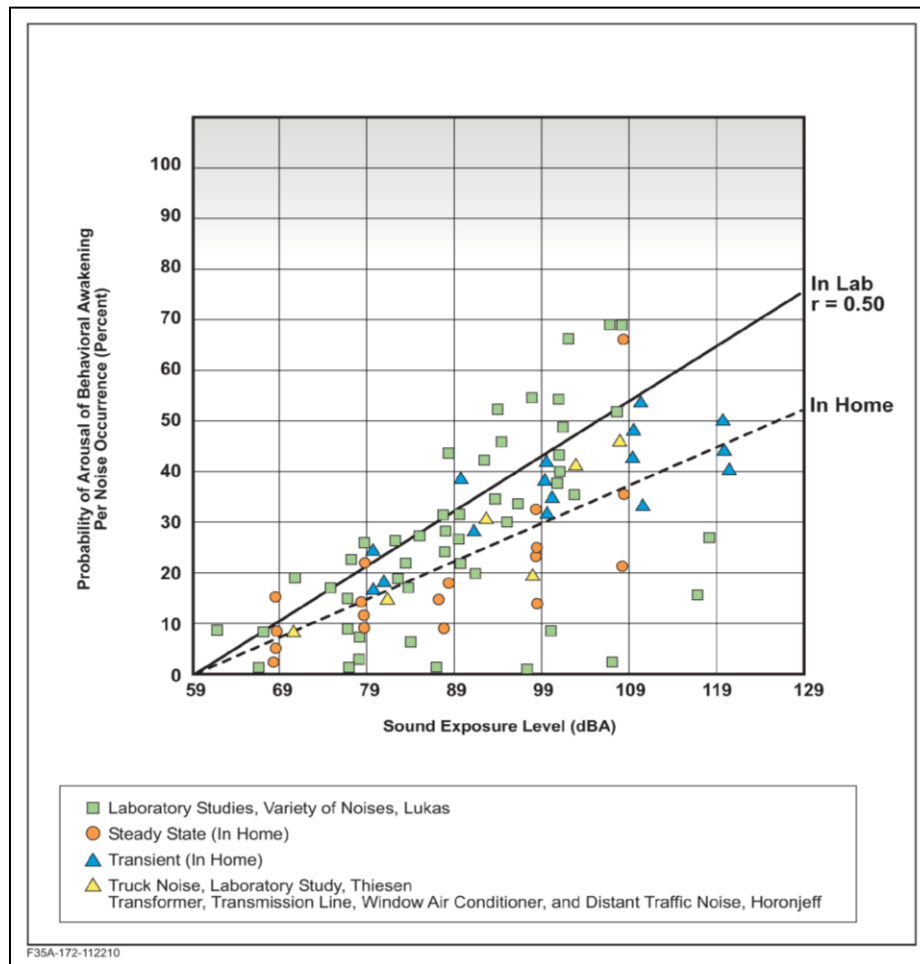
An analysis sponsored by the U.S. Air Force (USAF) summarized 21 published studies concerning the effects of noise on sleep (Pearsons et al. 1989). The analysis concluded that a lack of reliable in-home studies, combined with large differences among the results from the various laboratory studies, did not permit development of an acceptably accurate assessment procedure. The noise events used in the laboratory studies and in contrived in-home studies were presented at much higher rates of occurrence than would normally be experienced. None of the laboratory studies were of sufficiently long duration to determine any effects of habituation, such as that which would occur under normal community conditions. An extensive study of sleep interference in people’s own homes (Ollerhead et al. 1992) showed very little disturbance from aircraft noise.

There is some controversy associated with these studies, so a conservative approach should be taken in judging sleep interference. Based on older data, the USEPA identified an indoor DNL of 45 dB as necessary to protect against sleep interference (USEPA 1974). Assuming an outdoor-to-indoor noise level reduction of 20 dB for typical dwelling units, this corresponds to an outdoor DNL of 65 dB as minimizing sleep interference.

A 1984 publication reviewed the probability of arousal or behavioral awakening in terms of SEL (Kryter 1984). Figure C-4, extracted from Figure 10.37 of Kryter (1984), indicates that an indoor SEL of 65 dB or lower should awaken less than 5 percent of those exposed. These results do not include any habituation over time by sleeping subjects. Nevertheless, this provides a reasonable guideline for assessing sleep interference and corresponds to similar guidance for speech interference, as noted above.

It was noted in the early sleep disturbance research that the controlled laboratory studies did not account for many factors that are important to sleep behavior, such as habituation to the environment and previous exposure to noise and awakenings from sources other than aircraft noise. In the early 1990s, field studies were conducted to validate the earlier laboratory work. The most significant finding from these studies was that an estimated 80 to 90 percent of sleep disturbances were not related to individual outdoor noise events, but were instead the result of indoor noise sources and other non-noise-related factors. The results showed that there was less of an effect of noise on sleep in real-life conditions than had been previously reported from laboratory studies.

The interim Federal Interagency Committee on Noise (FICON) dose-response curve that was recommended for use in 1992 was based on the most pertinent sleep disturbance research that was conducted through the 1970s, primarily in laboratory settings. After that time, considerable field research was conducted to evaluate the sleep effects in people’s normal, home environment. Laboratory sleep studies tend to show higher values of sleep disturbance than field studies because people who sleep in their own homes are habituated to their environment and, therefore, do not wake up as easily (FICAN 1997).



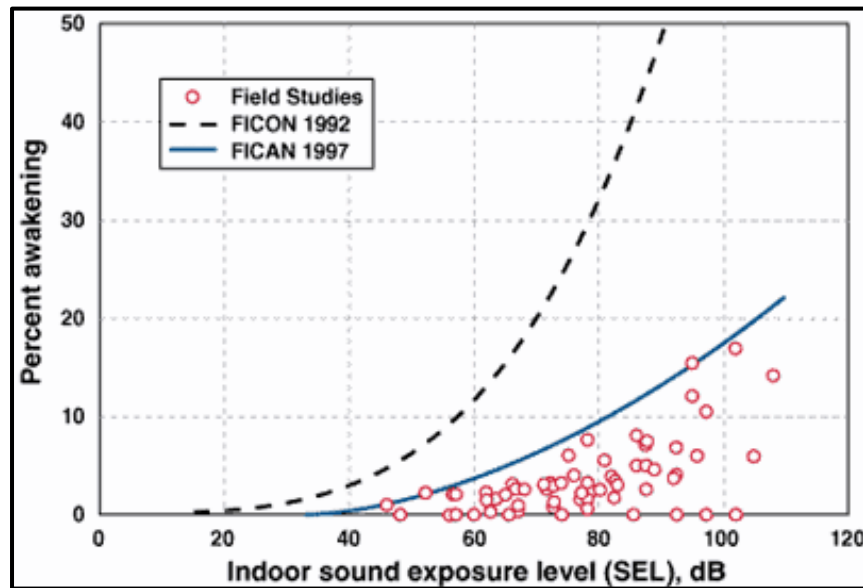
**Figure C-4. Plot of Sleep Awakening Data Versus Indoor SEL**

Based on the new information, the Federal Interagency Committee on Aircraft Noise (FICAN) updated its recommended dose-response curve in 1997, depicted as the lower curve on Figure C-5. This figure is based on the results of three field studies (Ollerhead et al. 1992; Fidell et al. 1994, 1995a, 1995b), along with the datasets from six previous field studies.

The new relationship represents the higher end, or upper envelope, of the latest field data. It should be interpreted as predicting the “maximum percent of the exposed population expected to be behaviorally awakened” or the “maximum percent awakened” for a given residential population. According to this relationship, a maximum of 3 percent of people would be awakened at an indoor SEL of 58 dB, compared to 10 percent using the 1992 curve. An indoor SEL of 58 dB is equivalent to outdoor SELs of 73 and 83 dB, respectively, assuming 15 and 25 dB noise level reduction from outdoor to indoor with windows open and closed, respectively.

The FICAN 1997 curve is represented by the following equation:

$$\text{Percent Awakenings} = 0.0087 \times [\text{SEL} - 30]^{1.79}$$



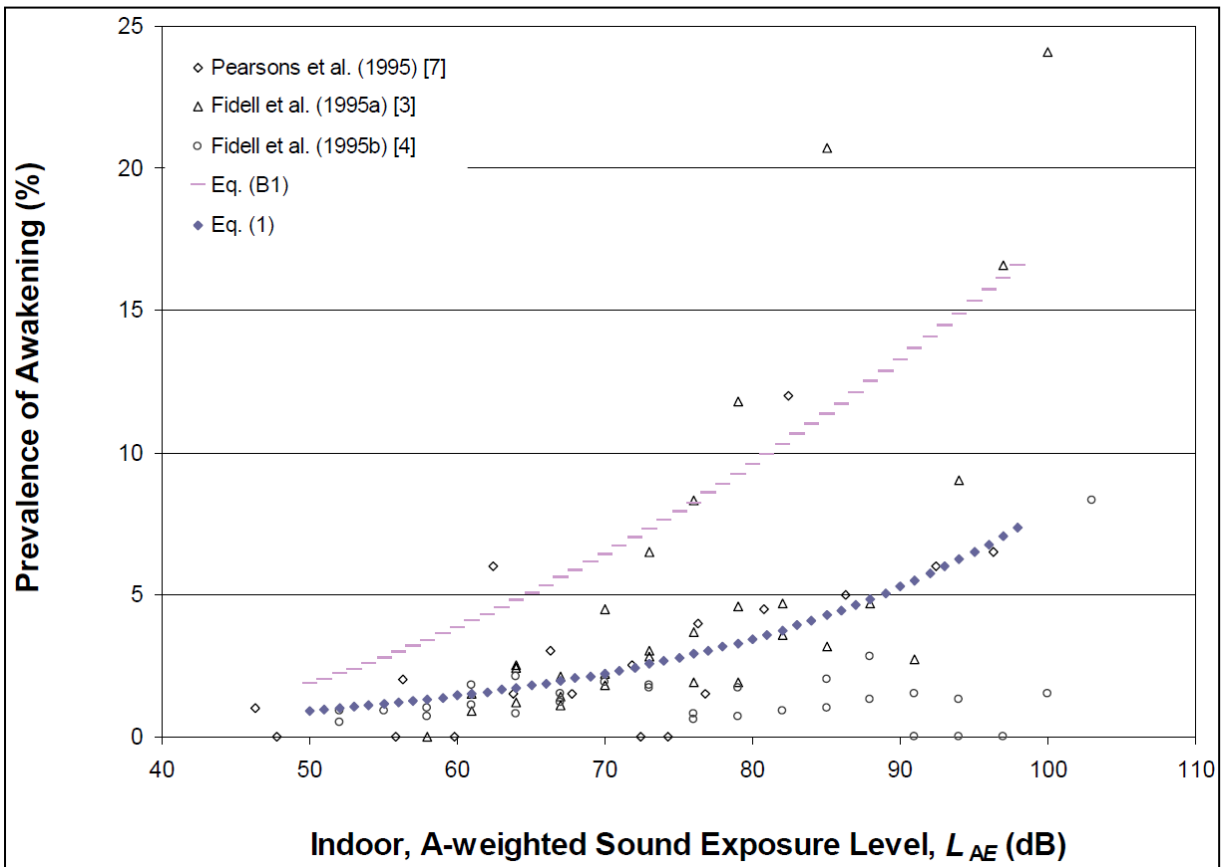
**Figure C-5. FICAN's 1997 Recommended Sleep Disturbance Dose-Response Relationship**

Note the relatively low percentage of awakenings to fairly high noise levels. People think they are awakened by a noise event, but usually the reason for awakening is otherwise. For example, a 1992 United Kingdom Civil Aviation Authority study found the average person was awakened about 18 times per night for reasons other than exposure to an aircraft noise – some of these awakenings are due to the biological rhythms of sleep and some to other reasons that were not correlated with specific aircraft events.

In July 2008, ANSI and the Acoustical Society of America (ASA) published a method to estimate the percent of the exposed population that might be awakened by multiple aircraft noise events based on statistical assumptions about the probability of awakening (or not awakening) (ANSI 2008). This method relies on probability theory rather than direct field research/experimental data to account for multiple events.

Figure C-6 depicts the awakenings data that form the basis and equations of ANSI (2008). The curve labeled 'Eq. (B1)' is the relationship between noise and awakening endorsed by FICAN in 1997. The ANSI-recommended curve labeled 'Eq. (1)' quantifies the probability of awakening for a population of sleepers who are exposed to an outdoor noise event as a function of the associated indoor SEL in the bedroom. This curve was derived from studies of behavioral awakenings associated with noise events in "steady state" situations where the population has been exposed to the noise long enough to be habituated. The data points on Figure C-6 come from these studies. Unlike the FICAN curve, the ANSI 2008 curve represents the average of the field research data points.

In December 2008, FICAN recommended the use of this new estimation procedure for future analyses of behavioral awakenings from aircraft noise. In that statement, FICAN also recognized that additional sleep disturbance research is underway by various research organizations, and results of that work may result in additional changes to FICAN's position. Until that time, FICAN recommends the use of ANSI (2008).



**Figure C-6. Relation Between Indoor SEL and Percentage of Persons Awakened as Stated in ANSI/ASA S12.9-2008/Part 6 (ANSI 2008)**

#### C.2.4 NOISE-INDUCED HEARING IMPAIRMENT

Residents in surrounding communities express concerns regarding the effects of aircraft noise on hearing. This section provides a brief overview of hearing loss caused by noise exposure. The goal is to provide a sense of perspective as to how aircraft noise (as experienced on the ground) compares to other activities that are often linked with hearing loss.

Hearing loss is generally interpreted as a decrease in the ear's sensitivity or acuity to perceive sound, i.e., a shift in the hearing threshold to a higher level. This change can either be a Temporary Threshold Shift (TTS) or a Permanent Threshold Shift (PTS) (Berger et al. 1995). TTS can result from exposure to loud noise over a given amount of time, yet the hearing loss is not necessarily permanent. An example of TTS might be a person attending a loud music concert. After the concert is over, the person may experience a threshold shift that may last several hours, depending upon the level and duration of exposure. While experiencing TTS, the person becomes less sensitive to low-level sounds, particularly at certain frequencies in the speech range (typically near 4,000 Hz). Normal hearing ability eventually returns, as long as the person has enough time to recover within a relatively quiet environment.

PTS usually results from repeated exposure to high noise levels, where the ears are not given adequate time to recover from the strain and fatigue of exposure. A common example of PTS is the result of working in a loud environment such as a factory. It is important to note that a temporary shift (TTS) can eventually become permanent (PTS) over time with continuous exposure to high noise levels. Thus, even if the ear is given time to recover from TTS, repeated

occurrence of TTS may eventually lead to permanent hearing loss. The point at which a TTS results in a PTS is difficult to identify and varies with a person's sensitivity.

Considerable data on hearing loss have been collected and analyzed by the scientific/medical community. It has been well established that continuous exposure to high noise levels will damage human hearing (USEPA 1978). The Occupational Safety and Health Administration regulation of 1971 standardizes the limits on workplace noise exposure for protection from hearing loss as an average level of 90 dB over an 8-hour work period or 85 dB over a 16-hour period (the average level is based on a 5 dB decrease per doubling of exposure time) (DoL 1971). Even the most protective criterion (no measurable hearing loss for the most sensitive portion of the population at the ear's most sensitive frequency, 4,000 Hz, after a 40-year exposure) is an average sound level of 70 dB over a 24-hour period.

The USEPA established 75 dB for an 8-hour exposure and 70 dB for a 24-hour exposure as the average noise level standard requisite to protect 96 percent of the population from greater than a 5 dB PTS (USEPA 1978). The National Academy of Sciences Committee on Hearing, Bioacoustics, and Biomechanics identified 75 dB as the minimum level at which hearing loss may occur (CHABA 1977). Finally, the World Health Organization has concluded that environmental and leisure-time noise below an  $L_{eq24}$  value of 70 dB "will not cause hearing loss in the large majority of the population, even after a lifetime of exposure" (WHO 2000).

#### C.2.4.1 Hearing Loss and Aircraft Noise

The 1982 USEPA guidelines report specifically addresses the criteria and procedures for assessing the noise-induced hearing loss in terms of the Noise-Induced Permanent Threshold Shift (NIPTS), a quantity that defines the permanent change in hearing level, or threshold, caused by exposure to noise (USEPA 1982). This effect is also described as Potential Hearing Loss. Numerically, the NIPTS is the change in threshold averaged over the frequencies 0.5, 1, 2, and 4 kHz that can be expected from daily exposure to noise over a normal working lifetime of 40 years, with the exposure beginning at an age of 20 years. A grand average of the NIPTS over time (40 years) and hearing sensitivity (10 to 90 percentiles of the exposed population) is termed the Average NIPTS. The Average NIPTS that can be expected for noise exposure as measured by the DNL metric is given in Table C-4.

**Table C-4. Average NIPTS and 10th Percentile NIPTS as a Function of DNL**

<b>dB DNL</b>	<b>Average NIPTS dB<sup>a</sup></b>	<b>10th Percentile NIPTS dB<sup>a</sup></b>
75–76	1.0	4.0
76–77	1.0	4.5
77–78	1.6	5.0
78–79	2.0	5.5
79–80	2.5	6.0
80–81	3.0	7.0
81–82	3.5	8.0
82–83	4.0	9.0
83–84	4.5	10.0
84–85	5.5	11.0
85–86	6.0	12.0
86–87	7.0	13.5
87–88	7.5	15.0
88–89	8.5	16.5
89–90	9.5	18.0

<sup>a</sup> Rounded to the nearest 0.5 dB.

For example, for a noise exposure of 80 dB DNL, the expected lifetime average value of NIPTS is 2.5 dB, or 6.0 dB for the 10th percentile. Characterizing the noise exposure in terms of DNL will usually overestimate the assessment of hearing loss risk as DNL includes a 10 dB weighting factor for aircraft operations occurring between 10:00 P.M. and 7:00 A.M. If, however, flight operations between the hours of 10:00 P.M. and 7:00 A.M. account for 5 percent or less of the total 24-hour operations, the overestimation is on the order of 1.5 dB.

From a civilian airport perspective, the scientific community has concluded that there is little likelihood that the resulting noise exposure from aircraft noise could result in either a temporary or permanent hearing loss. Studies on community hearing loss from exposure to aircraft flyovers near airports showed that there is no danger, under normal circumstances, of hearing loss due to aircraft noise (Newman and Beattie 1985). The USEPA criterion ( $L_{eq24} = 70$  dBA) can be exceeded in some areas located near airports, but that is only the case outdoors. Inside a building, where people are more likely to spend most of their time, the average noise level will be much less than 70 dBA (Eldred and von Gierke 1993). Eldred and von Gierke also report that “several studies in the United States, Japan, and the United Kingdom have confirmed the predictions that the possibility for permanent hearing loss in communities, even under the most intense commercial take-off and landing patterns, is remote.”

With regard to military airbases, as individual aircraft noise levels are increasing with the introduction of new aircraft, a 2009 DoD policy directive requires that hearing loss risk be estimated for the at risk population, defined as the population exposed to DNL greater than or equal to 80 dB (DoD 2009). Specifically, DoD components are directed to “use the 80 Day-Night A-Weighted (DNL) noise contour to identify populations at the most risk of potential hearing loss.” This does not preclude populations outside the 80 dB DNL contour (i.e., at lower exposure levels) from being at some degree of risk of hearing loss. However, the analysis should be restricted to populations within this contour area, including residents of on-base housing. The exposure of workers inside the base boundary area should be considered occupational and evaluated using the appropriate DoD component regulations for occupational noise exposure.

With regard to military airspace activity, studies have shown conflicting results. A 1995 laboratory study measured changes in human hearing from noise representative of low-flying aircraft on Military Training Routes (Nixon et al. 1993). The potential effects of aircraft flying along Military Training Routes is of particular concern because maximum overflight noise levels can exceed 115 dB, with rapid increases in noise levels exceeding 30 dB per second. In this study, participants were first subjected to four overflight noise exposures at A-weighted levels of 115 dB to 130 dB. Fifty percent of the subjects showed no change in hearing levels, 25 percent had a temporary 5 dB *increase* in sensitivity (the people could hear a 5 dB wider range of sound than before exposure), and 25 percent had a temporary 5 dB decrease in sensitivity (the people could hear a 5 dB narrower range of sound than before exposure). In the next phase, participants were subjected to a single overflight at a maximum level of 130 dB for eight successive exposures, separated by 90 seconds or until a temporary shift in hearing was observed. The TTSs showed an increase in sensitivity of up to 10 dB.

In another study of 115 test subjects between 18 and 50 years old in 1999, TTSs were measured after laboratory exposure to military low-altitude flight noise (Ising et al. 1999). According to the authors, the results indicate that repeated exposure to military low-altitude flight noise with a maximum sound level ( $L_{max}$ ) greater than 114 dB, especially if the noise level increases rapidly, may have the potential to cause noise-induced hearing loss in humans.

Aviation and typical community noise levels near airports are not comparable to the occupational or recreational noise exposures associated with hearing loss. Studies of aircraft noise levels associated with civilian airport activity have not definitively correlated permanent hearing impairment with aircraft activity. It is unlikely that airport neighbors will remain outside their homes 24 hours per day, so there is little likelihood of hearing loss below an average sound level of 75 dB DNL. Near military airbases, average noise levels above 75 dB may occur, and while new DoD policy dictates that NIPTS be evaluated, no research results to date have definitively related permanent hearing impairment to aviation noise.

#### **C.2.4.2 Non-Auditory Health Effects**

Studies have been conducted to determine whether correlations exist between noise exposure and cardiovascular problems, birth weight, and mortality rates. The non-auditory effect of noise on humans is not as easily substantiated as the effect on hearing. Prolonged stress is known to be a contributor to a number of health disorders. Kryter and Poza (1980) state, “It is more likely that noise-related general ill-health effects are due to the psychological annoyance from the noise interfering with normal everyday behavior, than it is from the noise eliciting, because of its intensity, reflexive response in the autonomic or other physiological systems of the body.” Psychological stresses may cause a physiological stress reaction that could result in impaired health. The National Institute for Occupational Safety and Health and USEPA commissioned the Committee on Hearing, Bioacoustics and Biomechanics (CHABA) in 1981 to study whether established noise standards are adequate to protect against health disorders other than hearing defects. CHABA’s conclusion was that:

Evidence from available research reports is suggestive, but it does not provide definitive answers to the question of health effects, other than to the auditory system, of long-term exposure to noise. It seems prudent, therefore, in the absence of adequate knowledge as to whether or not noise can produce effects upon health other than damage to auditory system, either directly or mediated through stress, that insofar as feasible, an attempt should be made to obtain more critical evidence.

Since the CHABA report, there have been further studies that suggest that noise exposure may cause hypertension and other stress-related effects in adults. Near an airport in Stockholm, Sweden, the prevalence of hypertension was reportedly greater among nearby residents who were exposed to energy averaged noise levels exceeding 55 dB and maximum noise levels exceeding 72 dB, particularly older subjects and those not reporting impaired hearing ability (Rosenlund et al. 2001). A study of elderly volunteers who were exposed to simulated military low-altitude flight noise reported that blood pressure was raised by  $L_{\max}$  of 112 dB and high speed level increase (Michalak et al. 1990). Yet another study of subjects exposed to varying levels of military aircraft or road noise found no significant relationship between noise level and blood pressure (Pulles et al. 1990).

Most studies of non-auditory health effects of long-term noise exposure have found that noise exposure levels established for hearing protection will also protect against any potential non-auditory health effects, at least in workplace conditions. One of the best scientific summaries of these findings is contained in the lead paper at the National Institutes of Health Conference on Noise and Hearing Loss, held on 22 to 24 January 1990 in Washington, D.C.:

The nonauditory effects of chronic noise exposure, when noise is suspected to act as one of the risk factors in the development of hypertension, cardiovascular disease, and other nervous disorders, have never been proven to occur as chronic

manifestations at levels below these criteria (an average of 75 dBA for complete protection against hearing loss for an 8-hour day).

At the 1988 International Congress on Noise as a Public Health Problem, most studies attempting to clarify such health effects did not find them at levels below the criteria protective of noise-induced hearing loss, and even above these criteria, results regarding such health effects were ambiguous. Consequently, one comes to the conclusion that establishing and enforcing exposure levels protecting against noise-induced hearing loss would not only solve the noise-induced hearing loss problem, but also any potential non-auditory health effects in the work place (von Gierke 1990).

Although these findings were specifically directed at noise effects in the workplace, they are equally applicable to aircraft noise effects in the community environment. Research studies regarding the non-auditory health effects of aircraft noise are ambiguous, at best, and often contradictory. Yet, even those studies that purport to find such health effects use time-average noise levels of 75 dB and higher for their research.

For example, two University of California, Los Angeles (UCLA) researchers apparently found a relationship between aircraft noise levels under the approach path to Los Angeles International Airport (LAX) and increased mortality rates among the exposed residents by using an average noise exposure level greater than 75 dB for the “noise-exposed” population (Meacham and Shaw 1979). Nevertheless, three other UCLA professors analyzed those same data and found no relationship between noise exposure and mortality rates (Frerichs et al. 1980).

As a second example, two other UCLA researchers used this same population near LAX to show a higher rate of birth defects for 1970 to 1972 when compared with a control group residing away from the airport (Jones and Tauscher 1978). Based on this report, a separate group at the Centers for Disease Control and Prevention performed a more thorough study of populations near Atlanta’s Hartsfield International Airport for 1970 to 1972 and found no relationship in their study of 17 identified categories of birth defects to aircraft noise levels above 65 dB (Edmonds et al. 1979).

In summary, there is no scientific basis for a claim that potential health effects exist for aircraft time-averaged sound levels below 75 dB. The potential for noise to affect physiological health, such as the cardiovascular system, has been speculated; however, no unequivocal evidence exists to support such claims (Harris 1997). Conclusions drawn from a review of health effect studies involving military low-altitude flight noise with its unusually high maximum levels and rapid rise in sound level have shown no increase in cardiovascular disease (Schwarze and Thompson 1993). Additional claims that are unsupported include flyover noise producing increased mortality rates and increases in cardiovascular death, aggravation of post-traumatic stress syndrome, increased stress, increases in admissions to mental hospitals, and adverse effects on pregnant women and fetuses (Harris 1997).

### **C.2.4.3 Performance Effects**

The effect of noise on the performance of activities or tasks has been the subject of many studies. Some of these studies have established links between continuous high noise levels and performance loss. Noise-induced performance losses are most frequently reported in studies employing noise levels in excess of 85 dB. Little change has been found in low-noise cases. It has been cited that moderate noise levels appear to act as a stressor for more sensitive individuals performing a difficult psychomotor task. While the results of research on the general effect of periodic aircraft noise on performance have yet to yield definitive criteria, several general trends have been noted including:

- A periodic intermittent noise is more likely to disrupt performance than a steady state continuous noise of the same level. Flyover noise, due to its intermittent nature, might be more likely to disrupt performance than a steady state noise of equal level.
- Noise is more inclined to affect the quality than the quantity of work.
- Noise is more likely to impair the performance of tasks that place extreme demands on the worker.

#### **C.2.4.4 Noise Effects on Children**

In response to noise-specific and other environmental studies, Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks* (1997), requires Federal agencies to ensure that policies, programs, and activities address environmental health and safety risks to identify any disproportionate risks to children.

A review of the scientific literature indicates that there has not been a tremendous amount of research in the area of aircraft noise effects on children. The research reviewed does suggest that environments with sustained high background noise can have variable effects, including noise effects on learning and cognitive abilities, and reports of various noise-related physiological changes.

##### *C.2.4.4.1 Effects on Learning and Cognitive Abilities*

In “Acoustical Performance Criteria, Design Requirements, and Guidelines for Schools,” (ANSI 2002), ANSI refers to studies that suggest that loud and frequent background noise can affect the learning patterns of young children (ANSI 2002). ANSI provides discussion on the relationships between noise and learning, and stipulates design requirements and acoustical performance criteria for outdoor-to-indoor noise isolation. School design is directed to be cognizant of, and responsive to, surrounding land uses and the shielding of outdoor noise from the indoor environment. The ANSI acoustical performance criteria for schools include the requirement that the 1-hour average background noise level shall not exceed 35 dBA in core learning spaces smaller than 20,000 cubic feet and 40 dBA in core learning spaces with enclosed volumes exceeding 20,000 cubic feet. This would require schools be constructed such that, in quiet neighborhoods, indoor noise levels are lowered by 15 to 20 dBA relative to outdoor levels. In schools near airports, indoor noise levels would have to be lowered by 35 to 45 dBA relative to outdoor levels (ANSI 2002).

The studies referenced by ANSI to support the new standard are not specific to jet aircraft noise and the potential effects on children. However, there are references to studies that have shown that children in noisier classrooms scored lower on a variety of tests. Excessive background noise or reverberation within schools causes interferences of communication and can therefore create an acoustical barrier to learning (ANSI 2002). Studies have been performed that contribute to the body of evidence emphasizing the importance of communication by way of the spoken language to the development of cognitive skills. The ability to read, write, comprehend, and maintain attentiveness, are, in part, based upon whether teacher communication is consistently intelligible (ANSI 2002).

Numerous studies have shown varying degrees of effects of noise on the reading comprehension, attentiveness, puzzle-solving, and memory/recall ability of children. It is generally accepted that young children are more susceptible than adults to the effects of background noise. Because of the developmental status of young children (linguistic, cognitive, and proficiency), barriers to hearing can cause interferences or disruptions in developmental evolution.

Research on the impacts of aircraft noise, and noise in general, on the cognitive abilities of school-aged children has received more attention in the last 20 years. Several studies suggest that aircraft noise can affect the academic performance of school children. Although many factors could contribute to learning deficits in school-aged children (e.g., socioeconomic level, home environment, diet, sleep patterns), evidence exists that suggests that chronic exposure to high aircraft noise levels can impair learning. Specifically, elementary school children attending schools near New York City's two airports demonstrated lower reading scores than children living farther away from the flight paths (Green et al. 1982). Researchers have found that tasks involving central processing and language comprehension (such as reading, attention, problem solving, and memory) appear to be the most affected by noise (Evans and Lepore 1993; Evans et al. 1998). It has been demonstrated that chronic exposure of first- and second-grade children to aircraft noise can result in reading deficits and impaired speech perception (i.e., the ability to hear common, low-frequency [vowel] sounds but not high frequencies [consonants] in speech) (Evans and Maxwell 1997).

The Evans and Maxwell (1997) study found that chronic exposure to aircraft noise resulted in reading deficits and impaired speech perception for first- and second-grade children. Other studies found that children residing near LAX had more difficulty solving cognitive problems and did not perform as well as children from quieter schools in puzzle-solving and attentiveness (Bronzaft 1997; Cohen et al. 1980). Children attending elementary schools in high aircraft noise areas near London's Heathrow Airport demonstrated poorer reading comprehension and selective cognitive impairments (Haines et al. 2001a, 2001b). Similar studies involving the testing of attention, memory, and reading comprehension of school children located near airports showed that their tests exhibited reduced performance results compared to those of similar groups of children who were located in quieter environments (Evans et al. 1998; Haines et al. 1998). The Haines and Stansfeld study indicated that there may be some long-term effects associated with exposure, as 1-year follow-up testing still demonstrated lowered scores for children in higher noise schools (Haines et al. 2001a, 2001b). In contrast, a 2002 study found that although children living near the old Munich airport scored lower in standardized reading and long-term memory tests than a control group, their performance on the same tests were equal to that of the control group once the airport was closed (Hygge et al. 2002).

Finally, although it is recognized that there are many factors that could contribute to learning deficits in school-aged children, there is increasing awareness that chronic exposure to high aircraft noise levels may impair learning. This awareness has led the World Health Organization (WHO 2000) and a North Atlantic Treaty Organization working group (NATO 2000) to conclude that daycare centers and schools should not be located near major sources of noise, such as highways, airports, and industrial sites.

#### *C.2.4.4.2 Health Effects*

Physiological effects in children exposed to aircraft noise and the potential for health effects have also been the focus of limited investigation. Studies in the literature include examination of blood pressure levels, hormonal secretions, and hearing loss.

As a measure of stress response to aircraft noise, blood pressure readings have been used to monitor children's health. Children who were chronically exposed to aircraft noise from a new airport near Munich, Germany, had modest (although significant) increases in blood pressure, significant increases in stress hormones, and a decline in quality of life (Evans et al. 1998). Children attending noisy schools had statistically significant average systolic and diastolic blood pressure ( $p < 0.03$ ). Systolic blood pressure means were 89.68 millimeters for children

attending schools located in noisier environments compared to 86.77 millimeters for a control group. Similarly, diastolic blood pressure means for the noisier environment group were 47.84 millimeters and 45.16 millimeters for the control group (Cohen et al. 1980).

Although the literature appears limited, studies focused on the wide range of potential effects of aircraft noise on school children have also investigated hormonal levels between groups of children exposed to aircraft noise compared to those in a control group. Specifically, two studies analyzed cortisol and urinary catecholamine levels in school children as measurements of stress response to aircraft noise (Haines et al. 2001b, 2001c). In both instances, there were no differences between the aircraft-noise-exposed children and the control groups.

Other studies have reported hearing losses from exposure to aircraft noise. Noise-induced hearing loss was reportedly higher in children who attended a school located under a flight path near a Taiwan airport, as compared to children at another school far away (Chen et al. 1997). Another study reported that hearing ability was reduced significantly in individuals who lived near an airport and were frequently exposed to aircraft noise (Chen and Chen 1993). In that study, noise exposure near the airport was reportedly uniform, with DNL greater than 75 dB and maximum noise levels of about 87 dB during overflights. Conversely, several other studies that were reviewed reported no difference in hearing ability between children exposed to high levels of airport noise and children located in quieter areas (Andrus et al. 1975; Fisch 1977; Wu et al. 1995).

## **C.2.5 NOISE EFFECTS ON DOMESTIC ANIMALS AND WILDLIFE**

Hearing is critical to an animal's ability to react, compete, reproduce, hunt, forage, and survive in its environment. While the existing literature does include studies on possible effects of jet aircraft noise and sonic booms on wildlife, there appears to have been little concerted effort in developing quantitative comparisons of aircraft noise effects on normal auditory characteristics. Behavioral effects have been relatively well described, but the larger ecological context issues, and the potential for drawing conclusions regarding effects on populations, has not been well developed.

The relationships between potential auditory/physiological effects and species interactions with their environments are not well understood. Mancini et al. (1988) assert that the consequences that physiological effects may have on behavioral patterns are vital to understanding the long-term effects of noise on wildlife. Questions regarding the effects (if any) on predator-prey interactions, reproductive success, and intra-inter specific behavior patterns remain.

The following discussion provides an overview of the existing literature on noise effects (particularly jet aircraft noise) on animal species. The literature reviewed outlines those studies that have focused on the observations of the behavioral effects that jet aircraft and sonic booms have on animals.

A great deal of research was conducted in the 1960s and 1970s on the effects of aircraft noise on the public and the potential for adverse ecological impacts. These studies were largely completed in response to the increase in air travel and the introduction of supersonic jet aircraft. According to Mancini et al. (1988), the foundation of information created from that focus does not necessarily correlate or provide information specific to the impacts on wildlife in areas overflown by aircraft at supersonic speed or at low altitudes.

The abilities to hear sounds and noise and to communicate assist wildlife in maintaining group cohesiveness and survivorship. Social species communicate by transmitting calls of warning, introduction, and others that are subsequently related to an individual's or group's responsiveness.

Animal species differ greatly in their responses to noise. Noise effects on domestic animals and wildlife are classified as primary, secondary, and tertiary. Primary effects are direct, physiological changes to the auditory system, and most likely include the masking of auditory signals. Masking is defined as the inability of an individual to hear important environmental signals that may arise from mates, predators, or prey. There is some potential that noise could disrupt a species' ability to communicate or interfere with behavioral patterns (Manci et al. 1988). Although the effects are likely temporal, aircraft noise may cause masking of auditory signals within exposed faunal communities. Animals rely on hearing to avoid predators, obtain food, and communicate and attract other members of their species. Aircraft noise may mask or interfere with these functions. Other primary effects, such as ear drum rupture or temporary (TTS) and permanent (PTS) hearing threshold shifts, are not as likely given the subsonic noise levels produced by aircraft overflights. Secondary effects may include non-auditory effects such as stress and hypertension; behavioral modifications; interference with mating or reproduction; and impaired ability to obtain adequate food, cover, or water. Tertiary effects are the direct result of primary and secondary effects. These include population decline and habitat loss. Most of the effects of noise are mild enough to be undetectable as variables of change in population size or population growth against the background of normal variation (Bowles 1995). Other environmental variables (e.g., predators, weather, changing prey base, ground-based disturbance) also influence secondary and tertiary effects and confound the ability to identify the ultimate factor in limiting productivity of a certain nest, area, or region. Overall, the literature suggests that species differ in their response to various types, durations, and sources of noise (Manci et al. 1988).

Many scientific studies have investigated the effects of aircraft noise on wildlife, and some have focused on wildlife "flight" due to noise. Apparently, animal responses to aircraft are influenced by many variables, including size, speed, proximity (both height above the ground and lateral distance), engine noise, color, flight profile, and radiated noise. The type of aircraft (e.g., fixed-wing versus rotor-wing [helicopter]) and type of flight mission may also produce different levels of disturbance, with varying animal responses (Manci et al. 1988). Consequently, it is difficult to generalize animal responses to noise disturbances across species.

One result of the 1988 Manci et al. literature review was the conclusion that, while behavioral observation studies were relatively limited, a general behavioral reaction in animals from exposure to aircraft noise is the startle response. The intensity and duration of the startle response appear to be dependent on which species is exposed, whether there is a group or an individual, and whether there have been previous exposures. Responses range from flight, trampling, stampeding, jumping, or running to movement of the head in the apparent direction of the noise source. Manci et al. (1988) reported that the literature indicated that avian species may be more sensitive to aircraft noise than mammals.

#### **C.2.5.1 Domestic Animals**

Although some studies report that the effects of aircraft noise on domestic animals is inconclusive, a majority of the literature reviewed indicates that domestic animals exhibit some behavioral responses to military overflights, but generally seem to habituate to the disturbances over a period of time. Mammals in particular appear to react to noise at sound levels higher than 90 dB, with responses including the startle response, freezing (i.e., becoming temporarily stationary), and fleeing from the sound source. Many studies on domestic animals suggest that some species appear to acclimate to some forms of sound disturbance (Manci et al. 1988). Some studies have reported primary and secondary effects, including reduced milk production and rate of milk release, increased glucose concentrations, decreased levels of hemoglobin, increased

heart rate, and a reduction in thyroid activity. These latter effects appear to represent a small percentage of the findings occurring in the existing literature.

Some reviewers have indicated that earlier studies and claims by farmers linking adverse effects of aircraft noise on livestock did not necessarily provide clear-cut evidence of cause and effect (Cottureau 1978). In contrast, many studies conclude that there is no evidence that aircraft overflights affect feed intake, growth, or production rates in domestic animals.

**Cattle.** In response to concerns about overflight effects on pregnant cattle, milk production, and cattle safety, the USAF prepared a handbook for environmental protection that summarizes the literature on the impacts of low-altitude flights on livestock (and poultry) and includes specific case studies conducted in numerous airspaces across the country. Adverse effects have been found in a few studies, but have not been reproduced in other similar studies. One such study, conducted in 1983, suggested that 2 of 10 cows in late pregnancy aborted after showing rising estrogen and falling progesterone levels. These increased hormonal levels were reported as being linked to 59 aircraft overflights. The remaining eight cows showed no changes in their blood concentrations and calved normally (USAF 1994). A similar study reported that abortions occurred in three out of five pregnant cattle after exposing them to flyovers by six different aircraft (USAF 1994). Another study suggested that feedlot cattle could stampede and injure themselves when exposed to low-level overflights (USAF 1994).

A majority of the studies reviewed suggest that there is little or no effect of aircraft noise on cattle. Studies presenting adverse effects on domestic animals have been limited. A number of studies (Kovalcik and Sottnik 1971; Parker and Bayley 1960) investigated the effects of jet aircraft noise and sonic booms on the milk production of dairy cows. Through the compilation and examination of milk production data from areas exposed to jet aircraft noise and sonic boom events, it was determined that milk yields were not affected. This was particularly evident in those cows that had been previously exposed to jet aircraft noise.

One study examined the causes of 1,763 abortions in Wisconsin dairy cattle over a 1-year time period, and none were associated with aircraft disturbances (USAF 1993). In 1987, Anderson contacted seven livestock operators for production data, and no effects of low-altitude and supersonic flights were noted. Three out of 43 cattle previously exposed to low-altitude flights showed a startle response to an F/A-18 aircraft flying overhead at 500 feet above ground level (AGL) at 400 knots by running less than 10 meters. They resumed normal activity within 1 minute (USAF 1994). In 1983, Beyer found that helicopters caused more reaction than other low-altitude overflights. A 1964 study also found that helicopters flying 30 to 60 feet overhead did not affect milk production and pregnancies of 44 cows and heifers (USAF 1994).

Additionally, Beyer reported that five pregnant dairy cows in a pasture did not exhibit fright-flight tendencies or have their pregnancies disrupted after being overflown by 79 low-altitude helicopter flights and 4 low-altitude, subsonic jet aircraft flights (USAF 1994). A 1956 study found that the reactions of dairy and beef cattle to noise from low-altitude, subsonic aircraft were similar to those caused by paper blowing about, strange persons, or other moving objects (USAF 1994).

In a report to Congress, the U.S. Forest Service concluded that “evidence both from field studies of wild ungulates and laboratory studies of domestic stock indicate that the risks of damage are small (from aircraft approaches of 50 to 100 meters), as animals take care not to damage themselves (USFS 1992). If animals are overflown by aircraft at altitudes of 50 to 100 meters, there is no evidence that mothers and young are separated, that animals collide with obstructions (unless confined) or that they traverse dangerous ground at too high a rate.” These varied study

results suggest that, although the confining of cattle could magnify animal response to aircraft overflight, there is no proven cause-and-effect link between startling cattle from aircraft overflights and abortion rates or lower milk production.

**Horses.** Horses have also been observed to react to overflights of jet aircraft. Several of the studies reviewed reported a varied response of horses to low-altitude aircraft overflights. Observations made in 1966 and 1968 noted that horses galloped in response to jet flyovers (USAF 1993). In 1995, Bowles cites Kruger and Erath as observing horses exhibiting intensive flight reactions, random movements, and biting/kicking behavior. However, no injuries or abortions occurred, and there was evidence that the mares adapted somewhat to the flyovers over the course of a month (USAF 1994). Although horses were observed noticing the overflights, it did not appear to affect either survivability or reproductive success. There was also some indication that habituation to these types of disturbances was occurring.

LeBlanc et al. studied the effects of F-14 jet aircraft noise on pregnant mares (1991). They specifically focused on any changes in pregnancy success, behavior, cardiac function, hormonal production, and rate of habituation. Their findings reported observations of “flight-fright” reactions, which caused increases in heart rates and serum cortisol concentrations. The mares, however, did habituate to the noise. Levels of anxiety and mass body movements were the highest after initial exposure, with intensities of responses decreasing thereafter. There were no differences in pregnancy success when compared to a control group.

**Swine.** Generally, the literature findings for swine appear to be similar to those reported for cows and horses. While there are some effects from aircraft noise reported in the literature, these effects are minor. Studies of continuous noise exposure (i.e., 6 hours or 72 hours of constant exposure) reported influences on short-term hormonal production and release. Additional constant exposure studies indicated the observation of stress reactions, hypertension, and electrolyte imbalances (Dufour 1980). A study by Bond et al. demonstrated no adverse effects on the feeding efficiency, weight gain, ear physiology, or thyroid and adrenal gland condition of pigs subjected to aircraft noise (1963). Observations of heart rate increase were recorded and it was noted that cessation of the noise resulted in the return to normal heart rates. Conception rates and offspring survivorship did not appear to be influenced by exposure to aircraft noise.

Similarly, simulated aircraft noise at levels of 100 dB to 135 dB had only minor effects on the rate of feed utilization, weight gain, food intake, and reproduction rates of boars and sows exposed, and there were no injuries or inner ear changes observed (Gladwin et al. 1988; Mancini et al. 1988).

**Domestic Fowl.** According to a 1994 position paper by the USAF on effects of low-altitude overflights (below 1,000 feet) on domestic fowl, overflight activity has negligible effects (USAF 1994). The paper did recognize that given certain circumstances, adverse effects can be serious. Some of the effects can be panic reactions, reduced productivity, and effects on marketability (e.g., bruising of the meat caused during “pile-up” situations).

The typical reaction of domestic fowl after exposure to sudden, intense noise is a short-term startle response. The reaction ceases as soon as the stimulus is ended, and within a few minutes all activity returns to normal. More severe responses are possible depending on the number of birds, the frequency of exposure, and environmental conditions. Large crowds of birds and birds not previously exposed are more likely to pile up in response to a noise stimulus (USAF 1994). According to studies and interviews with growers, it is typically the previously unexposed birds that incite panic crowding, and the tendency to do so is markedly reduced within five exposures to the stimulus (USAF 1994). This suggests that the birds habituate relatively quickly. Egg

productivity was not adversely affected by infrequent noise bursts, even at exposure levels as high as 120 to 130 dB.

Between 1956 and 1988, there were 100 recorded claims against the Navy for alleged damage to domestic fowl. The number of claims averaged three per year, with peak numbers of claims following publications of studies on the topic in the early 1960s (USAF 1994). Many of the claims were disproved or did not have sufficient supporting evidence. The claims were filed for the following alleged damages: 55 percent for panic reactions, 31 percent for decreased production, 6 percent for reduced hatchability, 6 percent for weight loss, and less than 1 percent for reduced fertility (USAF 1994).

**Turkeys.** The review of the existing literature suggests that there has not been a concerted or widespread effort to study the effects of aircraft noise on commercial turkeys. One study involving turkeys examined the differences between simulated versus actual overflight aircraft noise, turkey responses to the noise, weight gain, and evidence of habituation (Bowles et al. 1990). Findings from the study suggested that turkeys habituated to jet aircraft noise quickly, that there were no growth rate differences between the experimental and control groups, and that there were some behavioral differences that increased the difficulty in handling individuals within the experimental group.

Low-altitude overflights were shown to cause turkey flocks that were kept inside turkey houses to occasionally pile up and experience high mortality rates due to the aircraft noise and a variety of disturbances unrelated to aircraft (USAF 1994).

#### **C.2.5.2 Wildlife**

Studies on the effects of overflights and sonic booms on wildlife have been focused mostly on avian species and ungulates such as caribou and bighorn sheep. Few studies have been conducted on marine mammals, small terrestrial mammals, reptiles, amphibians, and carnivorous mammals. Generally, species that live entirely below the surface of the water have also been ignored due to the fact they do not experience the same level of sound as terrestrial species (NPS 1994). Wild ungulates appear to be much more sensitive to noise disturbance than domestic livestock (Manci et al. 1988). This may be due to previous exposure to disturbances. One common factor appears to be that low-altitude flyovers seem to be more disruptive in terrain where there is little cover (Manci et al. 1988).

#### **C.2.5.3 Mammals**

**Terrestrial Mammals.** Studies of terrestrial mammals have shown that noise levels of 120 dBA can damage mammals' ears, and levels of 95 dBA can cause temporary loss of hearing acuity. Noise from aircraft has affected other large carnivores by causing changes in home ranges, foraging patterns, and breeding behavior. One study recommended that aircraft not be allowed to fly at altitudes below 2,000 feet AGL over important grizzly and polar bear habitat (Dufour 1980). Wolves have been frightened by low-altitude flights that were 25 to 1,000 feet off the ground. However, wolves have been found to adapt to aircraft overflights and noise as long as they were not being hunted from aircraft (Dufour 1980).

Wild ungulates (American bison, caribou, bighorn sheep) appear to be much more sensitive to noise disturbance than domestic livestock (Weisenberger et al. 1996). Behavioral reactions may be related to the past history of disturbances by such things as humans and aircraft. Common reactions of reindeer kept in an enclosure and exposed to aircraft noise disturbance were a slight startle response, raising of the head, pricking ears, and scenting of the air. Panic reactions and

extensive changes in behavior of individual animals were not observed. Observations of caribou in Alaska exposed to fixed-wing aircraft and helicopters showed running and panic reactions occurred when overflights were at an altitude of 200 feet or less. The reactions decreased with increased altitude of overflights, and for overflights higher than 500 feet in altitude, the panic reactions stopped. Also, smaller groups reacted less strongly than larger groups. One negative effect of the running and avoidance behavior is increased expenditure of energy. For a 90-kilogram animal, the calculated expenditure due to aircraft harassment is 64 kilocalories per minute when running and 20 kilocalories per minute when walking. When conditions are favorable, this expenditure can be counteracted with increased feeding; however, during harsh winter conditions, this may not be possible. Incidental observations of wolves and bears exposed to fixed-wing aircraft and helicopters suggested that wolves were less disturbed than wild ungulates, while grizzly bears showed the greatest response of any animal species observed.

It has been proven that low-altitude overflights do induce stress in animals. Increased heart rates, an indicator of excitement or stress, have been found in pronghorn antelope, elk, and bighorn sheep. These reactions occur naturally as a response to predation, so infrequent overflights may not, in and of themselves, be detrimental. However, flights at high frequencies over a long period of time may cause harmful effects. The consequences of this disturbance, while cumulative, are not additive. Aircraft disturbance may not cause obvious and serious health effects, but coupled with a harsh winter, it may have an adverse impact. Research has shown that stress induced by other types of disturbances produces long-term decreases in metabolism and hormone balances in wild ungulates.

Behavioral responses can range from mild to severe. Mild responses include head raising, body shifting, or turning to orient toward the aircraft. Moderate disturbance may be nervous behaviors, such as trotting a short distance. Escape is the typical severe response.

**Marine Mammals.** The physiological composition of the ear in aquatic and marine mammals exhibits adaptation to the aqueous environment. These differences (relative to terrestrial species) manifest themselves in the auricle and middle ear (Manci et al. 1988). Some mammals use echolocation to perceive objects in their surroundings and to determine the directions and locations of sound sources (Simmons 1983 in Manci et al. 1988).

Research conducted on northern fur seals, sea lions, and ringed seals indicated that there are some differences in how various animal groups receive frequencies of sound. It was observed that these species exhibited varying intensities of a startle response to airborne noise, which was habituated over time. The rates of habituation appeared to vary with species, populations, and demographics (age, sex). Time of day of exposure was also a factor (Muyberg 1978 in Manci et al. 1988).

Studies accomplished near the Channel Islands were conducted near the area where the space shuttle launches occur. It was found that there were some response differences between species relative to the loudness of sonic booms. Those booms that were between 80 and 89 dBA caused a greater intensity of startle reactions than lower-intensity booms of 72 to 79 dBA. However, the duration of the startle responses to louder sonic booms was shorter (Jehl and Cooper 1980 in Manci et al. 1988).

Jehl and Cooper indicated that low-flying helicopters, loud boat noises, and humans were the most disturbing to pinnipeds (1980). According to the research, although the space launch and associated operational activity noises have not had a measurable effect on the pinniped population, it also suggests that there was a greater “disturbance level” exhibited during launch activities. There was a recommendation to continue observations for behavioral effects and to perform long-term population monitoring (Jehl and Cooper 1980).

The continued presence of single or multiple noise sources could cause marine mammals to leave a preferred habitat. However, it does not appear likely that overflights could cause migration from suitable habitats because aircraft noise over water is mobile and would not persist over any particular area. Aircraft noise, including supersonic noise, currently occurs in the overwater airspace of Eglin, Tyndall, and Langley Air Force Bases from sorties predominantly involving jet aircraft. Survey results reported in Davis et al. indicate that cetaceans (i.e., dolphins) occur under all of the Eglin and Tyndall marine airspace (2000). The continuing presence of dolphins indicates that aircraft noise does not discourage use of the area and apparently does not harm the locally occurring population.

In a summary by the National Park Service on the effects of noise on marine mammals, it was determined that gray whales and harbor porpoises showed no outward behavioral response to aircraft noise or overflights (1994). Bottlenose dolphins showed no obvious reaction in a study involving helicopter overflights at 1,200 to 1,800 feet above the water. They also did not show any reaction to survey aircraft unless the shadow of the aircraft passed over them, at which point there was some observed tendency to dive (Richardson et al. 1995). Other anthropogenic noises in the marine environment from ships and pleasure craft may have more of an effect on marine mammals than aircraft noise (USAF 2000). The noise effects on cetaceans appear to be somewhat attenuated by the air/water interface.

Manatees appear relatively unresponsive to human-generated noise to the point that they are often suspected of being deaf to oncoming boats (although their hearing is actually similar to that of pinnipeds) (Bullock et al. 1980). Little is known about the importance of acoustic communication to manatees, although they are known to produce at least 10 different types of sounds and are thought to have sensitive hearing (Richardson et al. 1995).

#### **C.2.5.4 Birds**

Auditory research conducted on birds indicates that they fall between reptiles and mammals relative to hearing sensitivity. According to Dooling, within the range of 1,000 to 5,000 Hz, birds show a level of hearing sensitivity similar to that of the more sensitive mammals (1978). In contrast to mammals, bird sensitivity falls off at a greater rate with increasing and decreasing frequencies. Passive observations and studies examining aircraft bird strikes indicate that birds nest and forage near airports. Aircraft noise in the vicinity of commercial airports apparently does not inhibit bird presence and use.

High-noise events (like a low-altitude aircraft overflight) may cause birds to engage in escape or avoidance behaviors, such as flushing from perches or nests (Ellis et al. 1991). These activities impose an energy cost on the birds that, over the long term, may affect survival or growth. In addition, the birds may spend less time engaged in necessary activities like feeding, preening, or caring for their young because they spend time in noise-avoidance activity. However, the long-term significance of noise-related impacts is less clear. Several studies on nesting raptors have indicated that birds become habituated to aircraft overflights and that long-term reproductive success is not affected (Grubb and King 1991; Ellis et al. 1991). Threshold noise levels for significant responses range from 62 dB for Pacific black brant to 85 dB for crested tern (Brown 1990; Ward and Stehn 1990).

Songbirds were observed to become silent prior to the onset of a sonic boom event (F-111 jets), followed by “raucous discordant cries.” There was a return to normal singing within 10 seconds after the boom (Higgins 1974 in Mancini et al. 1988). Ravens responded by emitting protestation calls, flapping their wings, and soaring.

Manci et al. reported a reduction in reproductive success in some small territorial passerines (i.e., perching birds or songbirds) after exposure to low-altitude overflights (1988). However, it has been observed that passerines are not driven any great distance from a favored food source by a nonspecific disturbance, such as aircraft overflights (USFS 1992). Further study may be warranted.

A recent study, conducted cooperatively between DoD and the U.S. Fish and Wildlife Service, assessed the response of the red-cockaded woodpecker to a range of military training noise events, including artillery, small arms, helicopter, and maneuver noise (Pater et al. 1999). The project findings show that the red-cockaded woodpecker successfully acclimates to military noise events. Depending on the noise level, which ranged from innocuous to very loud, the birds responded by flushing from their nest cavities. When the noise source was closer and the noise level was higher, the number of flushes increased proportionately. In all cases, however, the birds returned to their nests within a relatively short period of time (usually within 12 minutes). Additionally, the noise exposure did not result in any mortality or statistically detectable changes in reproductive success (Pater et al. 1999). Red-cockaded woodpeckers did not flush when artillery simulators were more than 122 meters away and SEL noise levels were 70 dBA.

Lynch and Speake studied the effects of both real and simulated sonic booms on the nesting and brooding eastern wild turkey in Alabama (1978). Hens at four nest sites were subjected to between 8 and 11 combined real and simulated sonic booms. All tests elicited similar responses, including quick lifting of the head and apparent alertness for between 10 and 20 seconds. No apparent nest failure occurred as a result of the sonic booms.

Twenty-one brood groups were also subjected to simulated sonic booms. Reactions varied slightly between groups, but the largest percentage of groups reacted by standing motionless after the initial blast. Upon the sound of the boom, the hens and poult fled until reaching the edge of the woods (approximately 4 to 8 meters). Afterward, the poults resumed feeding activities while the hens remained alert for a short period of time (approximately 15 to 20 seconds). In no instances were poults abandoned, nor did they scatter and become lost. Every observation group returned to normal activities within a maximum of 30 seconds after a blast.

#### *C.2.5.4.1 Raptors*

In a literature review of raptor responses to aircraft noise, Manci et al. found that most raptors did not show a negative response to overflights (1988). When negative responses were observed, they were predominantly associated with rotor-winged aircraft or jet aircraft that were repeatedly passing within 0.5 miles of a nest.

Ellis et al. performed a study to estimate the effects of low-level military jet aircraft and mid-to high-altitude sonic booms (both actual and simulated) on nesting peregrine falcons and seven other raptors (common black-hawk, Harris' hawk, zone-tailed hawk, red-tailed hawk, golden eagle, prairie falcon, bald eagle) (1991). They observed responses to test stimuli, determined nest success for the year of the testing, and evaluated site occupancy the following year. Both long- and short-term effects were noted in the study. The results reported the successful fledging of young in 34 of 38 nest sites (all eight species) subjected to low-level flight and/or simulated sonic booms. Twenty-two of the test sites were revisited in the following year, and observations of pairs or lone birds were made at all but one nest. Nesting attempts were underway at 19 of 20 sites that were observed long enough to be certain of breeding activity. Re-occupancy and productivity rates were within or above expected values for self-sustaining populations.

Short-term behavior responses were also noted. Overflights at a distance of 150 meters or less produced few significant responses and no severe responses. Typical responses included

crouching or, very rarely, flushing from the perch site. Significant responses were most evident before egg laying and after young were “well grown.” Incubating or brooding adults never burst from the nest, thus preventing egg breaking or knocking chicks out of the nest. Jet passes and sonic booms often caused noticeable alarm; however, significant negative responses were rare and did not appear to limit productivity or re-occupancy. The locations of some of the nests may have caused some birds to be habituated to aircraft noise. There were some test sites located at distances far from zones of frequent military aircraft usage, and the test stimuli were often closer, louder, and more frequent than would be likely for a normal training situation.

Manci et al. noted that a female northern harrier was observed hunting on a bombing range in Mississippi during bombing exercises (1988). The harrier was apparently unfazed by the exercises, even when a bomb exploded within 200 feet. In a similar case of habituation/non-disturbance, a study on the Florida snail-kite stated that the greatest reaction to overflights (approximately 98 dBA) was “watching the aircraft fly by.” No detrimental impacts to distribution, breeding success, or behavior were noted.

**Bald Eagle.** A study by Grubb and King on the reactions of the bald eagle to human disturbances showed that terrestrial disturbances elicited the greatest response, followed by aquatic (i.e., boats) and aerial disturbances (1991). The disturbance regime of the area where the study occurred was predominantly characterized by aircraft noise. The study found that pedestrians consistently caused responses that were greater in both frequency and duration. Helicopters elicited the highest level of aircraft-related responses. Aircraft disturbances, although the most common form of disturbance, resulted in the lowest levels of response. This low response level may have been due to habituation; however, flights less than 170 meters away caused reactions similar to other disturbance types. Ellis et al. showed that eagles typically respond to the proximity of a disturbance, such as a pedestrian or aircraft within 100 meters, rather than the noise level (1991). They also noted that helicopters were four times more likely to cause a reaction than a commercial jet and 20 times more likely to cause a reaction than a propeller plane. Fraser et al. have suggested that raptors habituate to overflights rapidly, sometimes tolerating aircraft approaches of 65 feet or less (1985).

**Osprey.** A 1998 study by Trimper et al. in Goose Bay, Labrador, Canada, focused on the reactions of nesting osprey to military overflights by CF-18 Hornets. Reactions varied from increased alertness and focused observation of planes to adjustments in incubation posture. No overt reactions (e.g., startle response, rapid nest departure) were observed as a result of an overflight. Young nestlings crouched as a result of any disturbance until they grew to 1 to 2 weeks prior to fledging. Helicopters, human presence, float planes, and other ospreys elicited the strongest reactions from nesting ospreys. These responses included flushing, agitation, and aggressive displays. Adult osprey showed high nest occupancy rates during incubation regardless of external influences.

The osprey observed occasionally stared in the direction of the flight before it was audible to the observers. The birds may have been habituated to the noise of the flights; however, overflights were strictly controlled during the experimental period. Strong reactions to float planes and helicopter may have been due to the slower flight and therefore longer duration of visual stimuli rather than noise-related stimuli.

**Red-Tailed Hawk.** Andersen et al. conducted a study that investigated the effects of low-level helicopter overflights on 35 red-tailed hawk nests (1989). Some of the nests had not been flown over prior to the study. The hawks that were naïve (i.e., not previously exposed) to helicopter flights exhibited stronger avoidance behavior (9 of 17 birds flushed from their nests) than those

that had experienced prior overflights. The overflights did not appear to affect nesting success in either study group. These findings were consistent with the belief that red-tailed hawks habituate to low-level air traffic, even during the nesting period.

#### *C.2.5.4.2 Migratory Waterfowl*

A study by Conomy et al. exposed previously unexposed ducks to 71 noise events per day that equaled or exceeded 80 dBA (1998). It was determined that the proportion of time black ducks reacted to aircraft activity and noise decreased from 38 percent to 6 percent in 17 days and remained stable at 5.8 percent thereafter. In the same study, the wood duck did not appear to habituate to aircraft disturbance. This supports the notion that animal response to aircraft noise is species-specific. Because a startle response to aircraft noise can result in flushing from nests, migrants and animals living in areas with high concentrations of predators would be the most vulnerable to experiencing effects of lowered birth rates and recruitment over time. Species that are subjected to infrequent overflights do not appear to habituate to overflight disturbance as readily.

Black brant studied in the Alaskan Peninsula were exposed to jets and propeller aircraft, helicopters, gunshots, people, boats, and various raptors. Jets accounted for 65 percent of all the disturbances. Humans, eagles, and boats caused a greater percentage of brant to take flight. There was markedly greater reaction to Bell-206-B helicopter flights than fixed-wing, single-engine aircraft (Ward et al. 1986).

The presence of humans and low-flying helicopters in the Mackenzie Valley North Slope area did not appear to affect the population density of Lapland longspurs, but the experimental group was shown to have reduced hatching and fledging success and higher nest abandonment. Human presence appeared to have a greater impact on the incubating behavior of the black brant, common eider, and Arctic tern than fixed-wing aircraft (Gunn and Livingston 1974).

Gunn and Livingston found that waterfowl and seabirds in the Mackenzie Valley and North Slope of Alaska and Canada became acclimated to float plane disturbance over the course of 3 days (1974). Additionally, it was observed that potential predators (bald eagle) caused a number of birds to leave their nests. Non-breeding birds were observed to be more reactive than breeding birds. Waterfowl were affected by helicopter flights, while snow geese were disturbed by Cessna 185 flights. The geese flushed when the planes were under 1,000 feet, compared to higher flight elevations. An overall reduction in flock sizes was observed. It was recommended that aircraft flights be reduced in the vicinity of pre-migratory staging areas.

Manci et al. reported that waterfowl were particularly disturbed by aircraft noise (1988). The most sensitive appeared to be snow geese. Canada geese and snow geese were thought to be more sensitive than other animals such as turkey vultures, coyotes, and raptors (Edwards et al. 1979).

#### *C.2.5.4.3 Wading and Shore Birds*

Black et al. studied the effects of low-altitude (less than 500 feet AGL) military training flights with sound levels from 55 to 100 dBA on wading bird colonies (i.e., great egret, snowy egret, tricolored heron, and little blue heron) (1984). The training flights involved three or four aircraft, which occurred once or twice per day. This study concluded that the reproductive activity—including nest success, nestling survival, and nestling chronology—was independent of F-16 overflights. Dependent variables were more strongly related to ecological factors, including location and physical characteristics of the colony and climatology. Another study on the effects of circling fixed-wing aircraft and helicopter overflights on wading bird colonies found that at altitudes of 195 to 390 feet, there was no reaction in nearly 75 percent of the 220 observations.

Ninety percent displayed no reaction or merely looked toward the direction of the noise source. Another 6 percent stood up, 3 percent walked from the nest, and 2 percent flushed (but were without active nests) and returned within 5 minutes (Kushlan 1979). Apparently non-nesting wading birds had a slightly higher incidence of reacting to overflights than nesting birds. Seagulls observed roosting near a colony of wading birds in another study remained at their roosts when subsonic aircraft flew overhead (Burger 1981). Colony distribution appeared to be most directly correlated to available wetland community types and was found to be distributed randomly with respect to Military Training Routes. These results suggest that wading bird species presence was most closely linked to habitat availability and that they were not affected by low-level military overflights (USAF 2000).

Burger studied the response of migrating shorebirds to human disturbance and found that shorebirds did not fly in response to aircraft overflights, but did flush in response to more localized intrusions (i.e., humans and dogs on the beach) (1986). Burger studied the effects of noise from John F. Kennedy International Airport in New York on herring gulls that nested less than 1 kilometer from the airport (1981). Noise levels over the nesting colony were 85 to 100 dBA on approach and 94 to 105 dBA on takeoff. Generally, there did not appear to be any prominent adverse effects of subsonic aircraft on nesting, although some birds flushed when a Concorde flew overhead and, when they returned, engaged in aggressive behavior. Groups of gulls tended to loaf in the area of the nesting colony, and these birds remained at the roost when the Concorde flew overhead. Up to 208 of the loafing gulls flew when supersonic aircraft flew overhead. These birds would circle around and immediately land in the loafing flock (USAF 2000).

In 1970, sonic booms were potentially linked to a mass hatch failure of sooty terns on the Dry Tortugas (Austin et al. 1970). The cause of the failure was not certain, but it was conjectured that sonic booms from military aircraft or an overgrowth of vegetation were factors. In the previous season, sooties were observed to react to sonic booms by rising in a “panic flight,” circling over the island, and then usually settling down on their eggs again. Hatching that year was normal. Following the 1969 hatch failure, excess vegetation was cleared and measures were taken to reduce supersonic activity. The 1970 hatch appeared to proceed normally. A colony of noddies on the same island hatched successfully in 1969, the year of the sooty hatch failure.

Subsequent laboratory tests of exposure of eggs to sonic booms and other impulsive noises (Bowles et al. 1991; Bowles et al. 1994; Cogger and Zegarra 1980) failed to show adverse effects on the hatching of eggs. A structural analysis (Ting et al. 2002) showed that, even under extraordinary circumstances, sonic booms would not damage an avian egg.

Burger observed no effects of subsonic aircraft on herring gulls in the vicinity of John F. Kennedy International Airport (1981). The Concorde aircraft did cause more nesting gulls to leave their nests (especially in areas of higher density of nests), causing the breakage of eggs and the scavenging of eggs by intruder prey. Clutch sizes were observed to be smaller in areas of higher-density nesting (presumably due to the greater tendency for panic flight) than in areas where there were fewer nests.

#### **C.2.5.5 Fish, Reptiles, and Amphibians**

The effects of overflight noise on fish, reptiles, and amphibians have been poorly studied, but conclusions regarding their expected responses have involved speculation based upon known physiologies and behavioral traits of these taxa (Gladwin et al. 1988). Although fish do startle in response to low-flying aircraft noise, and probably to the shadows of aircraft, they have been found to habituate to the sound and overflights. Reptiles and amphibians that respond to low frequencies and those that respond to ground vibration, such as spadefoots (genus *Scaphiopus*),

may be affected by noise. Limited information is available on the effects of short-duration noise events on reptiles. Dufour in 1980 and Mancini et al. in 1988, summarized a few studies of reptile responses to noise. Some reptile species tested under laboratory conditions experienced at least TTSs or hearing loss after exposure to 95 dB for several minutes. Crocodilians in general have the most highly developed hearing of all reptiles. Crocodile ears have lids that can be closed when the animal goes under water. These lids can reduce the noise intensity by 10 to 12 dB (Wever and Vernon 1957). On Homestead Air Reserve Station, Florida, two crocodilians (the American alligator and the spectacled caiman) reside in wetlands and canals along the base runway, suggesting that they can coexist with existing noise levels of an active runway, including DNLs of 85 dB.

#### **C.2.5.6 Summary**

Some physiological/behavioral responses such as increased hormonal production, increased heart rate, and reduction in milk production have been described in a small percentage of studies. A majority of the studies focusing on these types of effects have reported short-term or no effects.

The relationships between physiological effects and how species interact with their environments have not been thoroughly studied. Therefore, the larger ecological context issues regarding physiological effects of jet aircraft noise (if any) and resulting behavioral pattern changes are not well understood.

Animal species exhibit a wide variety of responses to noise. It is therefore difficult to generalize animal responses to noise disturbances or to draw inferences across species, as reactions to jet aircraft noise appear to be species-specific. Consequently, some animal species may be more sensitive than other species and/or may exhibit different forms or intensities of behavioral responses. For instance, one study suggests that wood ducks appear to be more sensitive and more resistant to acclimation to jet aircraft noise than Canada geese. Similarly, wild ungulates seem to be more easily disturbed than domestic animals.

The literature does suggest that common responses include the “startle” or “fright” response and, ultimately, habituation. It has been reported that the intensities and durations of the startle response decrease with the numbers and frequencies of exposures, suggesting no long-term adverse effects. The majority of the literature suggests that domestic animal species (cows, horses, chickens) and wildlife species exhibit adaptation, acclimation, and habituation after repeated exposure to jet aircraft noise and sonic booms.

Animal responses to aircraft noise appear to be somewhat dependent on, or influenced by, the size, shape, speed, proximity (vertical and horizontal), engine noise, color, and flight profile of planes. Helicopters also appear to induce greater intensities and durations of disturbance behavior as compared to fixed-wing aircraft. Some studies showed that animals that had been previously exposed to jet aircraft noise exhibited greater degrees of alarm and disturbance to other objects creating noise, such as boats, people, and objects blowing across the landscape. Other factors influencing response to jet aircraft noise may include wind direction, speed, and local air turbulence; landscape structures (i.e., amount and type of vegetative cover); and, in the case of bird species, whether the animals are in the incubation/nesting phase.

#### **C.2.6 PROPERTY VALUES**

There are a number of factors that affect property values, which makes predicting impacts difficult. Factors directly related to the property, such as size, improvements, and location of the property, as well as current conditions in the real estate market, interest rates, and housing sales

in the area, are more likely to have a direct adverse impact on property values. Several studies have analyzed property values as they relate to military and civilian aircraft noise. In one study, a regression analysis of property values as they relate to aircraft noise at two military installations was conducted (Fidell et al. 1996). This study found that, while aircraft noise at these installations may have had minor impacts on property values, it was difficult to quantify that impact. Other factors, such as the quality of the housing near the installations and the local real estate market, had a larger impact on property values. Therefore, the regression analysis was not able to predict the impact of aircraft noise on the property values of two comparable properties.

Another study analyzed 33 other studies attempting to quantify the impact of noise on property values (Nelson 2003). The result of the study supports the idea that the potential for an adverse impact on property values as a result of aircraft noise exists and estimates that the value of a specific property could be discounted between 0.5 and 0.6 percent per decibel when compared to a similar property that is not impacted by aircraft noise. Additional data indicate that the discount for property values as a result of noise would be higher for noise levels above 75 dB DNL.

### **C.2.7 SUBSONIC AIRCRAFT NOISE EFFECTS ON STRUCTURES**

Normally, the most sensitive components of a structure to airborne noise are the windows and, infrequently, the plastered walls and ceilings. An evaluation of the peak sound pressures impinging on the structure is normally sufficient to determine the possibility of damage. In general, at sound levels above 130 dB, there is the possibility of the excitation of structural component resonance. While certain frequencies (such as 30 Hz for window breakage) may be of more concern than other frequencies, conservatively, only sounds lasting more than 1 second above a sound level of 130 dB are potentially damaging to structural components (CHABA 1977). A study directed specifically at low-altitude, high-speed aircraft showed that there is little probability of structural damage from such operations (Sutherland 1989). One finding in that study is that sound levels at damaging frequencies (e.g., 30 Hz for window breakage or 15 to 25 Hz for whole-house response) are rarely above 130 dB.

Noise-induced structural vibration may also cause annoyance to dwelling occupants because of induced secondary vibrations, or “rattle,” of objects within the dwelling, such as hanging pictures, dishes, plaques, and bric-a-brac. Window panes may also vibrate noticeably when exposed to high levels of airborne noise, causing homeowners to fear breakage. In general, such noise-induced vibrations occur at sound levels above those considered normally incompatible with residential land use. Thus, assessments of noise exposure levels for compatible land use should also be protective of noise-induced secondary vibrations.

### **C.2.8 SUBSONIC AIRCRAFT NOISE EFFECTS ON STRUCTURE AND TERRAIN**

Members of the public often believe that noise from low-flying aircraft can cause avalanches or landslides by disturbing fragile soil or snow structures in mountainous areas. There are no known instances of such effects, and it is considered improbable that such effects would result from routine, subsonic aircraft operations.

### **C.2.9 NOISE EFFECTS ON HISTORICAL AND ARCHAEOLOGICAL SITES**

Because of the potential for increased fragility of structural components of historical buildings and other historical sites, aircraft noise may affect such sites more severely than newer, modern structures. Most scientific studies of the effects of noise and vibration on historic properties have considered potential impacts on standing architecture. For example, the FAA published a study

of potential impacts resulting from vibrations caused by the noise of subsonic Concorde overflights on five historic properties, including a restored plantation house, a stone bridge and tollhouse, and other structures (Hershey, Kevala, and Burns 1975). This study analyzed the breakage probabilities of structural elements that might be considered susceptible to vibration, such as window glass, mortar, and plaster. The results indicated that, with the exception of some already cracked window glass, there was no practical risk of noise-induced vibration damage to any of these structures.

Some studies of the effects of overflights—both subsonic and supersonic—on archaeological structures and other types of sites also have been published. Battis examined the effects of low-altitude overflights of B-52, RF-4C, and A-7 aircraft on standing walls at Long House Ruin in northeastern Arizona (Battis 1988). The motion levels observed during all passes were well below a conservative threshold for vibration in ancient structures, a level of 1.3 millimeters per second, established by two previous studies. Battis concluded that vibration associated with aircraft overflights at speeds and altitudes similar to those measured in his study would have no significant damaging effect on Long House and similar sites.

USAF National Environment Policy Act documents have examined the potential impacts on historic properties that might result from subsonic and supersonic overflights. In 1995, USAF published the *Environmental Assessment for Continued Supersonic Operations in the Black Mountain Supersonic Corridor and the Alpha/Precision Impact Range Area*. Eligible and potentially eligible cultural resources in the area of potential effect include petroglyph and pictograph panels located on a variety of rock types, historic adobe and non-adobe structures with standing walls, and historic mines (which contain tunnels) and wells. The report concludes that supersonic low-altitude flights have occurred over these corridors for 25 years or more and have resulted in no significant impacts on cultural resources. The California State Historic Preservation Office agreed, and during National Historic Preservation Act (NHPA) Section 106 review of this undertaking, concurred with USAF's finding that continued supersonic overflights would have no effect on historic properties.

As noted above for the noise effects of noise-induced vibrations on normal structures, assessments of noise exposure levels for normally compatible land uses should also be protective of historic and archaeological sites.

### **C.3 SUBSONIC AIRCRAFT NOISE MODELING**

An aircraft in subsonic flight generally emits noise from two sources: the engines and flow noise around the airframe. Noise generation mechanisms are complex and, in practical models, the noise sources must be based on measured data. The USAF has developed a series of computer models and aircraft noise databases for this purpose. The models include NOISEMAP (Moulton 1992), which is used to model noise around airbases. This model uses the NOISEFILE database developed by USAF. NOISEFILE data include SEL and  $L_{\max}$  as a function of speed and power setting for aircraft in straight flight.

Noise from an individual aircraft is a time-varying continuous sound. It is first audible as the aircraft approaches, increases to a maximum when the aircraft is near its closest point, then diminishes as it departs. The noise depends on the speed and power setting of the aircraft and its trajectory. The models noted above divide the trajectory into segments whose noise can be computed from the data in NOISEFILE. The contributions from these segments are summed.

Supporting routines from NOISEMAP were used to calculate SEL and  $L_{\max}$  for various flight altitudes and lateral off-sets from a ground receiver position. Sound intensity at a point on the

ground is also affected by several environmental factors, such as atmospheric conditions and properties of the terrain being overflowed.

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## **PUBLIC DOCUMENTS**

### **Air Force Instructions**

AFI 32-7063 – Air Installation Compatible Use Zone Program

### **Air Force Manuals**

AFMAN 32-1123 – Airfield and Heliport Planning and Design

### **Executive Orders**

Executive Order 13045, Protection of Children from Environmental Health Risks and Safety Risks

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**ATTACHMENT C-1      REPRESENTATIVE LOCATIONS POINT ANALYSIS**

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### **Attachment C-1. Representative Locations Point Analysis**

As part of the noise analysis, a detailed acoustical analysis was performed for a series of locations, which are listed in Tables C-1-1 through C-1-4. As described in Appendix B, Section B.1, these points were established based on central points of U.S. Census subdivisions, and therefore, do not represent a specific noise-sensitive receptor.

Tables C-1-1 through C-1-4 present the details of the major noise contributors at each basing alternative under baseline and proposed scenarios. For example, under the Altus AFB baseline scenario, the contributor of the highest SEL to Location No. 1 is C-17 flying profile C17VPE, which is a closed pattern. At the point of maximum noise level, the aircraft is located at a slant distance of 254 feet, at a height of 1,460 feet above mean sea level (MSL), a power setting of 1.4 EPR, and a speed of 180 knots. The event would be expected to occur approximately 2.27 times per training day between the hours of 7:00 A.M. and 10:00 P.M., and the SEL for that event is approximately 106.9 dB.

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios**

Altus Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
1	1	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	1,460	254	2.27	0.24	106.9
1	2	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,180	987	7.86	0.77	100.9
1	3	C-17	C17A16	ARR	17LA32	1.14 EPR	160	1,810	669	0.18	0.01	99.6
1	4	C-17	C17VPK	PAT	17LC44	1.14 EPR	180	2,173	825	0.63	0.00	96.5
1	5	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,784	851	1.56	0.09	96.4
1	6	C-17	C17A15	ARR	17LA32	1.14 EPR	180	1,832	937	0.18	0.01	96.3
1	7	C-17	C17A8	ARR	17AA33	1.15 EPR	160	1,805	821	4.28	0.27	96.0
1	8	C-17	C17DD	DEP	35RD11	1.34 EPR	160	2,804	1,734	0.89	0.00	95.9
1	9	C-17	C17VPL	PAT	17LC45	1.14 EPR	180	2,120	862	0.12	0.00	95.9
1	10	C-17	C17A15	ARR	17LA32	1.14 EPR	180	2,244	888	0.18	0.01	95.6
2	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	736	0.10	0.00	97.1
2	2	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,651	2,395	14.61	1.42	92.3
2	3	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,651	2,395	12.62	0.59	92.3
2	4	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,651	2,395	3.91	0.26	92.3
2	5	KC-46X	46RCX	PAT	35RC13	60.00 % N1	180	1,702	476	1.21	0.14	91.4
2	6	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,604	6.79	0.32	90.7
2	7	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,603	1.23	0.06	90.6
2	8	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,841	1,904	0.19	0.03	88.8
2	9	C-17	C17TDB	DEP	17LD32	1.34 EPR	250	4,506	3,394	1.03	0.00	88.5
2	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,949	3,798	0.46	0.00	88.2
3	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	3	C-17	C17A18	ARR	17RA21	1.15 EPR	125	2,066	685	0.08	0.06	99.4
3	4	C-17	C17A19	ARR	17RA22	1.14 EPR	125	2,096	712	0.08	0.06	98.9
3	5	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	6	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	7	C-17	TC17A1	ARR	17RA11	1.14 EPR	140	2,119	733	0.09	0.03	98.3
3	8	C-17	C17AB	ARR	17RA11	1.14 EPR	140	2,119	733	1.25	0.00	98.3
3	9	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,018	710	3.91	0.26	98.2
3	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	160	2,020	711	0.44	0.03	98.2
4	1	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,034	945	14.61	1.42	102.1
4	2	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,034	945	12.62	0.59	102.1
4	3	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,034	945	3.91	0.26	102.1
4	4	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	2,537	1,658	1.03	0.00	97.4
4	5	C-17	C17TDA	DEP	17LD31	1.42 EPR	250	2,262	1,654	1.03	0.00	96.6
4	6	C-17	C17DA	DEP	17LD11	1.34 EPR	160	2,457	1,751	1.64	0.00	96.2
4	7	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	2,726	1,781	0.63	0.00	96.1
4	8	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	2,726	1,781	0.46	0.00	96.1
4	9	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	2,726	1,781	0.12	0.00	96.1
4	10	C-17	C17A42	ARR	35RA33	1.15 EPR	160	991	971	1.46	0.05	95.9
5	1	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	2,255	996	1.23	0.06	101.2
5	2	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	2,360	1,088	0.23	0.02	100.5
5	3	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	2,360	1,088	0.87	0.09	100.5

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
5	4	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	2,382	1,632	0.55	0.00	98.3
5	5	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	1,943	1,517	6.79	0.32	98.0
5	6	C-17	C17TDG	DEP	35RD31	1.42 EPR	250	1,882	1,656	0.55	0.00	96.6
5	7	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	1,884	1,655	7.86	0.77	96.5
5	8	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	2,530	1,742	0.25	0.00	96.5
5	9	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	2,530	1,742	0.34	0.00	96.5
5	10	C-17	C17VPT	PAT	35RC45	1.34 EPR	170	2,530	1,742	0.07	0.00	96.5
6	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	727	0.10	0.00	96.7
6	2	C-17	C17IPE	PAT	17LC14	1.20 EPR	160	1,982	1,454	1.56	0.09	92.8
6	3	C-17	C17VPH	PAT	17LC16	1.10 EPR	160	2,899	1,594	14.61	1.42	91.8
6	4	C-17	C17VPG	PAT	17LC13	1.10 EPR	160	2,899	1,594	12.62	0.59	91.8
6	5	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,899	1,594	3.91	0.26	91.7
6	6	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,594	1.23	0.06	91.0
6	7	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,594	6.79	0.32	91.0
6	8	C-17	C17VPU	PAT	35RC16	1.20 EPR	160	2,898	1,592	7.86	0.77	90.8
6	9	C-17	C17VPN	PAT	35LC16	1.20 EPR	160	2,899	1,593	0.87	0.09	90.8
6	10	C-17	C17A32	ARR	35AA32	1.10 EPR	200	2,000	1,649	0.15	0.01	87.9
7	1	C-17	C17TDH	DEP	35RD32	1.40 EPR	0	1,382	1,609	0.55	0.00	101.4
7	2	C-17	C17TDG	DEP	35RD31	1.40 EPR	0	1,382	1,609	0.55	0.00	101.3
7	3	C-17	C17TDB	DEP	17LD32	1.42 EPR	145	1,751	1,660	1.03	0.00	98.7
7	4	C-17	C17TDA	DEP	17LD31	1.42 EPR	145	1,530	1,620	1.03	0.00	97.9
7	5	KC-135R	135RDL	DEP	35RD32	88.00 % NF	0	1,382	1,609	0.13	0.02	97.5
7	6	KC-135R	135RDK	DEP	35RD12	88.00 % NF	0	1,382	1,609	0.00	0.00	97.5
7	7	KC-135R	135RDJ	DEP	35RD11	88.00 % NF	0	1,382	1,609	0.01	0.00	97.5
7	8	C-17	C17DA	DEP	17LD11	1.34 EPR	130	1,751	1,660	1.64	0.00	97.1
7	9	C-17	C17VPK	PAT	17LC44	1.34 EPR	140	1,636	1,635	0.63	0.00	96.8
7	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	140	1,636	1,635	0.46	0.00	96.8
8	1	C-17	C17IPF	PAT	35RC14	1.14 EPR	160	1,899	1,063	0.84	0.05	94.0
8	2	C-17	C17VPQ	PAT	35LC42	1.14 EPR	180	2,295	1,174	0.88	0.09	93.1
8	3	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,572	1,361	0.19	0.03	92.6
8	4	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	3,892	2,656	1.03	0.00	91.0
8	5	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,254	2,996	0.46	0.00	90.3
8	6	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	4,254	2,996	0.63	0.00	90.3
8	7	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	4,254	2,996	0.12	0.00	90.3
8	8	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,479	2,989	14.61	1.42	90.2
8	9	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,479	2,989	12.62	0.59	90.2
8	10	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,479	2,989	3.91	0.26	90.2
9	1	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,513	1,182	0.45	0.00	104.1
9	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,513	1,182	0.45	0.00	104.1
9	3	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,722	406	0.30	0.21	104.0
9	4	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,721	406	0.30	0.21	103.9

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
9	5	C-17	C17A39	ARR	35LA23	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	6	C-17	C17A38	ARR	35LA22	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	7	C-17	C17A37	ARR	35LA21	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	8	C-17	C17IPC	PAT	35LC11	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	9	C-17	C17IPD	PAT	35LC12	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	10	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,744	423	2.11	0.14	102.9
10	1	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,686	1,627	0.45	0.00	100.5
10	2	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,686	1,627	0.45	0.00	100.5
10	3	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,875	798	2.11	0.14	97.0
10	4	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	5	C-17	TC17D1	DEP	17RD11	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	6	C-17	C17DB	DEP	17RD11	1.34 EPR	160	2,863	1,777	3.44	0.28	95.7
10	7	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,848	1,053	0.30	0.21	95.2
10	8	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	9	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	10	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,846	1,052	0.30	0.21	94.8
11	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	3	C-17	C17A24	ARR	17RA32	1.14 EPR	160	1,785	497	0.55	0.39	102.2
11	4	C-17	C17A35	ARR	17RA34	1.14 EPR	160	1,785	497	0.55	0.39	102.0
11	5	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,804	512	0.08	0.06	101.8
11	6	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	7	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	8	C-17	C17VPI	PAT	17LC17	1.10 EPR	140	1,777	490	3.91	0.26	101.4
11	9	C-17	C17A19	ARR	17RA22	1.14 EPR	125	1,822	526	0.08	0.06	101.4
11	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	140	1,777	491	0.44	0.03	101.4
12	1	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,445	1,533	7.86	0.77	97.6
12	2	C-17	C17VPF	PAT	17RC42	1.14 EPR	180	2,113	992	1.64	0.16	94.4
12	3	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	2,397	2,095	6.79	0.32	94.1
12	4	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,867	1,247	1.56	0.09	93.2
12	5	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	2,603	1,247	2.27	0.24	92.0
12	6	C-17	C17VPJ	PAT	17LC42	1.14 EPR	180	2,390	1,299	0.46	0.00	91.9
12	7	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	3,420	2,438	0.55	0.00	91.9
12	8	C-17	C17A17	ARR	17LA33	1.15 EPR	160	2,518	1,323	2.71	0.09	91.8
12	9	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	3,679	2,655	0.25	0.00	91.1
12	10	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	3,679	2,655	0.34	0.00	91.1
13	1	T-38C	T38D4	DEP	35LD12	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.7
13	2	T-38C	T38D3	DEP	35LD11	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.6
13	3	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
13	4	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5
13	5	T-38C	T38D1	DEP	17RD11	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	6	T-38C	T38D2	DEP	17RD12	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	7	C-17	C17TDF	DEP	35LD32	1.42 EPR	145	2,002	3,648	1.17	0.00	91.1
13	8	C-17	C17TDE	DEP	35LD31	1.42 EPR	185	1,662	3,606	1.17	0.00	89.8
13	9	C-17	C17VPS	PAT	35LC45	1.34 EPR	140	1,854	3,626	0.23	0.02	89.6
13	10	C-17	C17VPR	PAT	35LC44	1.34 EPR	140	1,854	3,626	1.22	0.13	89.6
14	1	C-17	C17VPA	PAT	17RC13	1.34 EPR	170	2,729	1,415	0.44	0.03	98.1
14	2	C-17	C17VPB	PAT	17RC16	1.34 EPR	170	2,752	1,770	1.62	0.16	96.2
14	3	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,420	2,789	14.61	1.42	92.5
14	4	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,420	2,789	12.62	0.59	92.5
14	5	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,420	2,789	3.91	0.26	92.5
14	6	C-17	C17VPC	PAT	17RC17	1.34 EPR	170	2,748	2,651	2.29	0.11	92.5
14	7	C-17	C17VPM	PAT	35LC13	1.20 EPR	160	2,900	1,758	0.23	0.02	90.0
14	8	C-17	C17A40	ARR	35LA32	1.10 EPR	180	2,900	1,758	0.30	0.21	86.5
14	9	C-17	C17TDD	DEP	17RD32	1.34 EPR	250	4,756	4,654	2.17	0.00	86.2
14	10	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	3,398	6,162	1.03	0.00	86.0
15	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	3	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	1,928	594	1.23	0.06	105.9
15	4	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	1,973	636	0.23	0.02	105.2
15	5	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	1,973	636	0.87	0.09	105.2
15	6	C-17	C17A24	ARR	17RA32	1.14 EPR	140	1,580	407	0.55	0.39	103.7
15	7	C-17	C17A35	ARR	17RA34	1.14 EPR	140	1,580	407	0.55	0.39	103.6
15	8	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	9	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	10	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,608	421	0.08	0.06	103.4
16	1	C-17	C17CPWA	PAT	17RCW	1.34 EPR	170	2,167	2,230	8.41	0.39	94.9
16	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5
16	3	T-38C	T38C2	PAT	17RC12	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5
16	4	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	5	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	6	T-38C	T38D3	DEP	35LD11	100.00 % RPM	0	1,382	5,518	0.19	0.00	89.1
16	7	T-38C	T38D4	DEP	35LD12	100.00 % RPM	0	1,382	5,518	0.19	0.00	89.1
16	8	C-17	C17TDC	DEP	17RD31	1.42 EPR	250	2,270	3,761	2.17	0.00	88.8
16	9	C-17	C17TDD	DEP	17RD32	1.34 EPR	160	2,442	3,907	2.17	0.00	88.8
16	10	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,459	3,803	0.06	0.00	88.7

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
1	1	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	1,460	254	2.27	0.24	106.9
1	2	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,180	987	7.86	0.77	100.9
1	3	C-17	C17A16	ARR	17LA32	1.14 EPR	160	1,810	669	0.18	0.01	99.6
1	4	C-17	C17VPK	PAT	17LC44	1.14 EPR	180	2,173	825	0.63	0.00	96.5
1	5	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,784	851	1.56	0.09	96.4
1	6	C-17	C17A7	ARR	17AA32	1.14 EPR	160	1,832	937	0.29	0.02	96.3
1	7	C-17	C17A8	ARR	17AA33	1.15 EPR	160	1,805	821	4.28	0.27	96.0
1	8	C-17	C17DD	DEP	35RD11	1.34 EPR	160	2,804	1,734	0.89	0.00	95.9
1	9	C-17	C17VPL	PAT	17LC45	1.14 EPR	180	2,120	862	0.12	0.00	95.9
1	10	C-17	C17A15	ARR	17LA32	1.14 EPR	180	2,244	888	0.18	0.01	95.6
2	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	736	0.10	0.00	97.1
2	2	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,651	2,395	14.61	1.42	92.3
2	3	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,651	2,395	12.62	0.59	92.3
2	4	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,651	2,395	3.91	0.26	92.3
2	5	KC-46X	46RCX	PAT	35RC13	60.00 % N1	180	1,702	476	3.83	0.88	91.4
2	6	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,605	6.79	0.32	90.7
2	7	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,604	1.23	0.06	90.6
2	8	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,841	1,904	0.19	0.03	89.9
2	9	C-17	C17TDB	DEP	17LD32	1.34 EPR	250	4,506	3,394	1.03	0.00	88.5
2	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,949	3,798	0.46	0.00	88.2
3	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	3	C-17	C17A18	ARR	17RA21	1.15 EPR	125	2,066	686	0.08	0.06	99.4
3	4	C-17	C17A19	ARR	17RA22	1.14 EPR	125	2,096	712	0.08	0.06	98.9
3	5	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	6	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	7	C-17	TC17A1	ARR	17RA11	1.14 EPR	140	2,119	733	0.09	0.03	98.3
3	8	C-17	C17AB	ARR	17RA11	1.14 EPR	140	2,119	733	1.25	0.00	98.3
3	9	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,018	710	3.91	0.26	98.2
3	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	160	2,020	711	0.44	0.03	98.2
4	1	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,034	945	14.61	1.42	102.1
4	2	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,034	945	12.62	0.59	102.1
4	3	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,034	945	3.91	0.26	102.1
4	4	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	2,537	1,658	1.03	0.00	97.4
4	5	C-17	C17TDA	DEP	17LD31	1.42 EPR	250	2,262	1,654	1.03	0.00	96.6
4	6	C-17	C17DA	DEP	17LD11	1.34 EPR	160	2,457	1,751	1.64	0.00	96.2
4	7	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	2,726	1,781	0.63	0.00	96.1
4	8	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	2,726	1,781	0.46	0.00	96.1
4	9	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	2,726	1,781	0.12	0.00	96.1
4	10	C-17	C17A42	ARR	35RA33	1.15 EPR	160	991	971	1.46	0.05	95.9
5	1	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	2,255	996	1.23	0.06	101.2
5	2	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	2,360	1,088	0.23	0.02	100.5
5	3	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	2,360	1,088	0.87	0.09	100.5

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
5	4	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	2,382	1,632	0.55	0.00	98.3
5	5	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	1,943	1,517	6.79	0.32	98.0
5	6	KC-46X	46C9	PAT	35RC4	85.00 % N1	180	2,000	684	0.19	0.03	97.1
5	7	C-17	C17TDG	DEP	35RD31	1.42 EPR	250	1,882	1,656	0.55	0.00	96.6
5	8	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	1,884	1,655	7.86	0.77	96.5
5	9	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	2,530	1,742	0.25	0.00	96.5
5	10	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	2,530	1,742	0.34	0.00	96.5
6	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	727	0.10	0.00	96.7
6	2	KC-46X	46C4	PAT	17LC4	85.00 % N1	180	2,446	876	0.45	0.07	94.3
6	3	C-17	C17IPE	PAT	17LC14	1.20 EPR	160	1,982	1,454	1.56	0.09	92.8
6	4	C-17	C17VPH	PAT	17LC16	1.10 EPR	160	2,899	1,594	14.61	1.42	91.8
6	5	C-17	C17VPG	PAT	17LC13	1.10 EPR	160	2,899	1,594	12.62	0.59	91.8
6	6	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,899	1,594	3.91	0.26	91.8
6	7	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,594	1.23	0.06	91.0
6	8	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,594	6.79	0.32	91.0
6	9	C-17	C17VPU	PAT	35RC16	1.20 EPR	160	2,898	1,592	7.86	0.77	90.8
6	10	C-17	C17VPN	PAT	35LC16	1.20 EPR	160	2,899	1,593	0.87	0.09	90.8
7	1	C-17	C17TDH	DEP	35RD32	1.40 EPR	0	1,382	1,609	0.55	0.00	101.4
7	2	C-17	C17TDG	DEP	35RD31	1.40 EPR	0	1,382	1,609	0.55	0.00	101.3
7	3	C-17	C17TDB	DEP	17LD32	1.42 EPR	145	1,751	1,660	1.03	0.00	98.7
7	4	C-17	C17TDA	DEP	17LD31	1.42 EPR	145	1,530	1,619	1.03	0.00	97.9
7	5	KC-135R	135RDL	DEP	35RD32	88.00 % NF	0	1,382	1,609	0.13	0.02	97.5
7	6	KC-135R	135RDK	DEP	35RD12	88.00 % NF	0	1,382	1,609	0.00	0.00	97.5
7	7	KC-135R	135RDJ	DEP	35RD11	88.00 % NF	0	1,382	1,609	0.01	0.00	97.5
7	8	C-17	C17DA	DEP	17LD11	1.34 EPR	130	1,751	1,660	1.64	0.00	97.1
7	9	C-17	C17VPK	PAT	17LC44	1.34 EPR	140	1,636	1,635	0.63	0.00	96.8
7	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	140	1,636	1,635	0.46	0.00	96.8
8	1	C-17	C17IPF	PAT	35RC14	1.14 EPR	160	1,899	1,062	0.84	0.05	94.0
8	2	C-17	C17VPQ	PAT	35LC42	1.14 EPR	180	2,295	1,174	0.88	0.09	93.1
8	3	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,572	1,361	0.19	0.03	92.6
8	4	KC-46X	46RDC	DEP	17LD32	92.00 % N1	185	2,559	1,350	0.12	0.07	91.3
8	5	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	3,892	2,656	1.03	0.00	91.0
8	6	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,254	2,996	0.46	0.00	90.3
8	7	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	4,254	2,996	0.63	0.00	90.3
8	8	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	4,254	2,996	0.12	0.00	90.3
8	9	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,479	2,989	14.61	1.42	90.2
8	10	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,479	2,989	12.62	0.59	90.2
9	1	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,513	1,183	0.45	0.00	104.1
9	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,513	1,183	0.45	0.00	104.1

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
9	3	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,722	407	0.30	0.21	104.0
9	4	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,721	406	0.30	0.21	103.9
9	5	C-17	C17A39	ARR	35LA23	1.15 EPR	125	1,769	451	0.04	0.03	103.0
9	6	C-17	C17A38	ARR	35LA22	1.15 EPR	125	1,769	451	0.04	0.03	103.0
9	7	C-17	C17A37	ARR	35LA21	1.15 EPR	125	1,769	451	0.04	0.03	103.0
9	8	C-17	C17IPC	PAT	35LC11	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	9	C-17	C17IPD	PAT	35LC12	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	10	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,744	423	2.11	0.14	102.8
10	1	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,686	1,628	0.45	0.00	100.5
10	2	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,686	1,628	0.45	0.00	100.5
10	3	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,875	798	2.11	0.14	97.0
10	4	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	5	C-17	TC17D1	DEP	17RD11	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	6	C-17	C17DB	DEP	17RD11	1.34 EPR	160	2,863	1,777	3.44	0.28	95.7
10	7	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,848	1,054	0.30	0.21	95.2
10	8	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	9	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	10	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,846	1,052	0.30	0.21	94.8
11	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	3	C-17	C17A24	ARR	17RA32	1.14 EPR	160	1,785	497	0.55	0.39	102.2
11	4	C-17	C17A35	ARR	17RA34	1.14 EPR	160	1,785	497	0.55	0.39	102.1
11	5	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,804	512	0.08	0.06	101.8
11	6	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	7	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	8	C-17	C17VPI	PAT	17LC17	1.10 EPR	140	1,777	489	3.91	0.26	101.4
11	9	C-17	C17A19	ARR	17RA22	1.14 EPR	125	1,822	526	0.08	0.06	101.4
11	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	140	1,777	491	0.44	0.03	101.4
12	1	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,445	1,533	7.86	0.77	97.6
12	2	C-17	C17VPF	PAT	17RC42	1.14 EPR	180	2,113	993	1.64	0.16	94.4
12	3	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	2,397	2,095	6.79	0.32	94.1
12	4	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,867	1,247	1.56	0.09	93.2
12	5	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	2,603	1,247	2.27	0.24	92.0
12	6	C-17	C17VPJ	PAT	17LC42	1.14 EPR	180	2,390	1,299	0.46	0.00	91.9
12	7	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	3,420	2,438	0.55	0.00	91.9
12	8	C-17	C17A17	ARR	17LA33	1.15 EPR	160	2,518	1,323	2.71	0.09	91.8
12	9	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	3,679	2,655	0.25	0.00	91.1
12	10	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	3,679	2,655	0.34	0.00	91.1
13	1	T-38C	T38D4	DEP	35LD12	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.7
13	2	T-38C	T38D3	DEP	35LD11	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.6

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
13	3	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5
13	4	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5
13	5	T-38C	T38D1	DEP	17RD11	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	6	T-38C	T38D2	DEP	17RD12	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	7	C-17	C17TDF	DEP	35LD32	1.42 EPR	145	2,002	3,648	1.17	0.00	91.1
13	8	C-17	C17TDE	DEP	35LD31	1.42 EPR	185	1,662	3,606	1.17	0.00	89.8
13	9	C-17	C17VPS	PAT	35LC45	1.34 EPR	140	1,854	3,626	0.23	0.02	89.6
13	10	C-17	C17VPR	PAT	35LC44	1.34 EPR	140	1,854	3,626	1.22	0.13	89.6
14	1	C-17	C17VPA	PAT	17RC13	1.34 EPR	170	2,729	1,415	0.44	0.03	98.1
14	2	C-17	C17VPB	PAT	17RC16	1.34 EPR	170	2,752	1,770	1.62	0.16	96.2
14	3	KC-46X	46C4	PAT	17LC4	85.00 % N1	180	2,204	888	0.45	0.07	95.7
14	4	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,420	2,789	14.61	1.42	92.5
14	5	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,420	2,789	12.62	0.59	92.5
14	6	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,420	2,789	3.91	0.26	92.5
14	7	C-17	C17VPC	PAT	17RC17	1.34 EPR	170	2,748	2,651	2.29	0.11	92.5
14	8	C-17	C17VPM	PAT	35LC13	1.20 EPR	160	2,900	1,758	0.23	0.02	90.0
14	9	C-17	C17A40	ARR	35LA32	1.10 EPR	180	2,900	1,758	0.30	0.21	86.5
14	10	C-17	C17TDD	DEP	17RD32	1.34 EPR	250	4,756	4,654	2.17	0.00	86.2
15	1	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	2	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	3	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	1,928	594	1.23	0.06	105.9
15	4	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	1,973	636	0.23	0.02	105.2
15	5	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	1,973	636	0.87	0.09	105.2
15	6	C-17	C17A24	ARR	17RA32	1.14 EPR	140	1,580	407	0.55	0.39	103.7
15	7	C-17	C17A35	ARR	17RA34	1.14 EPR	140	1,580	407	0.55	0.39	103.6
15	8	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	9	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	10	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,608	421	0.08	0.06	103.4
16	1	C-17	C17CPWA	PAT	17RCW	1.34 EPR	170	2,167	2,230	8.41	0.39	94.9
16	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5
16	3	T-38C	T38C2	PAT	17RC12	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5
16	4	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	5	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	6	C-17	C17TDC	DEP	17RD31	1.42 EPR	250	2,270	3,761	2.17	0.00	88.8
16	7	C-17	C17TDD	DEP	17RD32	1.34 EPR	160	2,442	3,907	2.17	0.00	88.8
16	8	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,459	3,803	0.06	0.00	88.7
16	9	C-17	TC17D1	DEP	17RD11	1.34 EPR	160	2,459	3,803	0.06	0.00	88.7
16	10	C-17	C17DB	DEP	17RD11	1.34 EPR	160	2,459	3,803	3.44	0.28	88.7

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
1	1	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	1,474	71	2.27	0.24	109.0
1	2	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,179	798	7.86	0.77	102.9
1	3	C-17	C17A16	ARR	17LA32	1.14 EPR	160	1,809	543	0.18	0.01	101.4
1	4	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,784	552	1.56	0.09	100.7
1	5	C-17	C17A8	ARR	17AA33	1.15 EPR	160	1,805	631	4.28	0.27	98.9
1	6	C-17	C17VPK	PAT	17LC44	1.14 EPR	180	2,184	807	0.63	0.00	96.8
1	7	C-17	C17A15	ARR	17LA32	1.14 EPR	180	2,244	802	0.18	0.01	96.6
1	8	C-17	C17DD	DEP	35RD11	1.34 EPR	160	2,784	1,868	0.89	0.00	95.2
1	9	KC-135R	135RCB	PAT	17LC14	65.00 % NF	160	1,784	552	0.46	0.07	94.3
1	10	C-17	C17IPF	PAT	35RC14	1.30 EPR	160	2,679	1,795	0.84	0.05	93.8
2	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	736	0.10	0.00	97.1
2	2	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,651	2,395	14.61	1.42	92.3
2	3	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,651	2,395	12.62	0.59	92.3
2	4	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,651	2,395	3.91	0.26	92.3
2	5	KC-46X	46RCX	PAT	35RC13	60.00 % N1	180	1,702	476	1.21	0.14	91.4
2	6	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,604	6.79	0.32	90.7
2	7	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,603	1.23	0.06	90.6
2	8	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,841	1,904	0.19	0.03	88.8
2	9	C-17	C17TDB	DEP	17LD32	1.34 EPR	250	4,506	3,394	1.03	0.00	88.5
2	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,949	3,798	0.46	0.00	88.2
3	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,915	1,499	0.24	0.00	101.5
3	3	C-17	C17A18	ARR	17RA21	1.15 EPR	125	2,066	685	0.08	0.06	99.4
3	4	C-17	C17A19	ARR	17RA22	1.14 EPR	125	2,096	712	0.08	0.06	98.9
3	5	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	6	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	2,135	749	0.78	0.05	98.5
3	7	C-17	TC17A1	ARR	17RA11	1.14 EPR	140	2,119	733	0.09	0.03	98.3
3	8	C-17	C17AB	ARR	17RA11	1.14 EPR	140	2,119	733	1.25	0.00	98.3
3	9	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,018	710	3.91	0.26	98.2
3	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	160	2,020	711	0.44	0.03	98.2
4	1	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,034	945	14.61	1.42	102.1
4	2	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,034	945	12.62	0.59	102.1
4	3	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,034	945	3.91	0.26	102.1
4	4	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	2,537	1,658	1.03	0.00	97.4
4	5	C-17	C17TDA	DEP	17LD31	1.42 EPR	250	2,262	1,654	1.03	0.00	96.6
4	6	C-17	C17DA	DEP	17LD11	1.34 EPR	160	2,457	1,751	1.64	0.00	96.2
4	7	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	2,726	1,781	0.63	0.00	96.1
4	8	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	2,726	1,781	0.46	0.00	96.1
4	9	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	2,726	1,781	0.12	0.00	96.1
4	10	C-17	C17A42	ARR	35RA33	1.15 EPR	160	991	971	1.46	0.05	95.9
5	1	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	2,255	996	1.23	0.06	101.2

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
5	2	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	2,360	1,088	0.23	0.02	100.5
5	3	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	2,360	1,088	0.87	0.09	100.5
5	4	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	2,382	1,632	0.55	0.00	98.3
5	5	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	1,943	1,517	6.79	0.32	98.0
5	6	KC-46X	46C9	PAT	35RC4	85.00 % N1	180	2,000	683	0.20	0.02	97.1
5	7	C-17	C17TDG	DEP	35RD31	1.42 EPR	250	1,882	1,656	0.55	0.00	96.6
5	8	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	1,884	1,655	7.86	0.77	96.5
5	9	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	2,530	1,742	0.25	0.00	96.5
5	10	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	2,530	1,742	0.34	0.00	96.5
6	1	C-17	C17A46	ARR	35RA32	1.10 EPR	200	2,000	727	0.10	0.00	96.7
6	2	KC-46X	46C4	PAT	17LC4	85.00 % N1	180	2,446	876	0.47	0.05	94.3
6	3	C-17	C17IPE	PAT	17LC14	1.20 EPR	160	1,982	1,454	1.56	0.09	92.8
6	4	C-17	C17VPH	PAT	17LC16	1.10 EPR	160	2,899	1,594	14.61	1.42	91.8
6	5	C-17	C17VPG	PAT	17LC13	1.10 EPR	160	2,899	1,594	12.62	0.59	91.8
6	6	C-17	C17VPI	PAT	17LC17	1.10 EPR	160	2,899	1,594	3.91	0.26	91.7
6	7	C-17	C17VPO	PAT	35LC17	1.20 EPR	160	2,900	1,594	1.23	0.06	91.0
6	8	C-17	C17VPP	PAT	35RC13	1.20 EPR	160	2,900	1,594	6.79	0.32	91.0
6	9	C-17	C17VPU	PAT	35RC16	1.20 EPR	160	2,898	1,592	7.86	0.77	90.8
6	10	C-17	C17VPN	PAT	35LC16	1.20 EPR	160	2,899	1,593	0.87	0.09	90.8
7	1	C-17	C17TDH	DEP	35RD32	1.40 EPR	0	1,382	1,609	0.55	0.00	101.4
7	2	C-17	C17TDG	DEP	35RD31	1.40 EPR	0	1,382	1,609	0.55	0.00	101.3
7	3	C-17	C17TDB	DEP	17LD32	1.42 EPR	145	1,751	1,660	1.03	0.00	98.7
7	4	C-17	C17TDA	DEP	17LD31	1.42 EPR	145	1,530	1,620	1.03	0.00	97.9
7	5	KC-135R	135RDL	DEP	35RD32	88.00 % NF	0	1,382	1,609	0.13	0.02	97.5
7	6	KC-135R	135RDK	DEP	35RD12	88.00 % NF	0	1,382	1,609	0.00	0.00	97.5
7	7	KC-135R	135RDJ	DEP	35RD11	88.00 % NF	0	1,382	1,609	0.01	0.00	97.5
7	8	C-17	C17DA	DEP	17LD11	1.34 EPR	130	1,751	1,660	1.64	0.00	97.1
7	9	C-17	C17VPK	PAT	17LC44	1.34 EPR	140	1,636	1,635	0.63	0.00	96.8
7	10	C-17	C17VPJ	PAT	17LC42	1.34 EPR	140	1,636	1,635	0.46	0.00	96.8
8	1	C-17	C17IPF	PAT	35RC14	1.14 EPR	160	1,899	1,063	0.84	0.05	94.0
8	2	C-17	C17VPQ	PAT	35LC42	1.14 EPR	180	2,295	1,174	0.88	0.09	93.1
8	3	KC-135R	135RDC	DEP	17LD32	92.00 % NF	185	2,572	1,361	0.19	0.03	91.7
8	4	KC-46X	46RDC	DEP	17LD32	92.00 % N1	185	2,559	1,350	0.19	0.00	91.3
8	5	C-17	C17TDB	DEP	17LD32	1.34 EPR	160	3,892	2,656	1.03	0.00	91.0
8	6	C-17	C17VPJ	PAT	17LC42	1.34 EPR	170	4,254	2,996	0.46	0.00	90.3
8	7	C-17	C17VPK	PAT	17LC44	1.34 EPR	170	4,254	2,996	0.63	0.00	90.3
8	8	C-17	C17VPL	PAT	17LC45	1.34 EPR	170	4,254	2,996	0.12	0.00	90.3
8	9	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,479	2,989	14.61	1.42	90.2

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
8	10	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,479	2,989	12.62	0.59	90.2
9	1	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,513	1,182	0.45	0.00	104.1
9	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,513	1,182	0.45	0.00	104.1
9	3	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,722	406	0.30	0.21	104.0
9	4	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,721	406	0.30	0.21	103.9
9	5	C-17	C17A39	ARR	35LA23	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	6	C-17	C17A38	ARR	35LA22	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	7	C-17	C17A37	ARR	35LA21	1.15 EPR	125	1,769	451	0.04	0.03	103.1
9	8	C-17	C17IPD	PAT	35LC12	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	9	C-17	C17IPC	PAT	35LC11	1.14 EPR	140	1,786	467	0.42	0.03	102.9
9	10	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,744	423	2.11	0.14	102.9
10	1	T-38C	T38C1	PAT	17RC11	100.00 % RPM	250	2,686	1,627	0.45	0.00	100.5
10	2	T-38C	T38C2	PAT	17RC12	100.00 % RPM	250	2,686	1,627	0.45	0.00	100.5
10	3	C-17	C17VPV	PAT	35RC17	1.10 EPR	140	1,875	798	2.11	0.14	97.0
10	4	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	5	C-17	TC17D1	DEP	17RD11	1.34 EPR	160	2,863	1,777	0.06	0.00	95.7
10	6	C-17	C17DB	DEP	17RD11	1.34 EPR	160	2,863	1,777	3.44	0.28	95.7
10	7	C-17	C17A40	ARR	35LA32	1.14 EPR	160	1,848	1,053	0.30	0.21	95.2
10	8	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	9	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,702	2,544	0.36	0.00	95.0
10	10	C-17	C17A36	ARR	35LA34	1.14 EPR	160	1,846	1,052	0.30	0.21	94.8
11	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	250	2,561	1,201	0.24	0.00	103.9
11	3	C-17	C17A24	ARR	17RA32	1.14 EPR	160	1,785	497	0.55	0.39	102.2
11	4	C-17	C17A35	ARR	17RA34	1.14 EPR	160	1,785	497	0.55	0.39	102.0
11	5	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,804	512	0.08	0.06	101.8
11	6	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	7	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,845	544	0.78	0.05	101.5
11	8	C-17	C17VPI	PAT	17LC17	1.10 EPR	140	1,777	490	3.91	0.26	101.4
11	9	C-17	C17A19	ARR	17RA22	1.14 EPR	125	1,822	526	0.08	0.06	101.4
11	10	C-17	C17VPA	PAT	17RC13	1.10 EPR	140	1,777	491	0.44	0.03	101.4
12	1	C-17	C17VPU	PAT	35RC16	1.34 EPR	170	2,445	1,533	7.86	0.77	97.6
12	2	C-17	C17VPF	PAT	17RC42	1.14 EPR	180	2,113	992	1.64	0.16	94.4
12	3	C-17	C17VPP	PAT	35RC13	1.34 EPR	170	2,397	2,095	6.79	0.32	94.1
12	4	C-17	C17IPE	PAT	17LC14	1.14 EPR	160	1,867	1,247	1.56	0.09	93.2
12	5	C-17	C17VPE	PAT	17RC44	1.14 EPR	180	2,603	1,247	2.27	0.24	92.0
12	6	C-17	C17VPJ	PAT	17LC42	1.14 EPR	180	2,390	1,299	0.46	0.00	91.9
12	7	C-17	C17TDH	DEP	35RD32	1.34 EPR	160	3,420	2,438	0.55	0.00	91.9

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
12	8	C-17	C17A17	ARR	17LA33	1.15 EPR	160	2,518	1,323	2.71	0.09	91.8
12	9	C-17	C17VPX	PAT	35RC42	1.34 EPR	170	3,679	2,655	0.25	0.00	91.1
12	10	C-17	C17VPW	PAT	35RC44	1.34 EPR	170	3,679	2,655	0.34	0.00	91.1
13	1	T-38C	T38D4	DEP	35LD12	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.7
13	2	T-38C	T38D3	DEP	35LD11	100.00 % RPM	250	2,243	3,699	0.19	0.00	92.6
13	3	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5
13	4	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	1,897	3,632	0.24	0.00	91.5
13	5	T-38C	T38D1	DEP	17RD11	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	6	T-38C	T38D2	DEP	17RD12	100.00 % RPM	0	1,382	3,595	0.36	0.00	91.4
13	7	C-17	C17TDF	DEP	35LD32	1.42 EPR	145	2,002	3,648	1.17	0.00	91.1
13	8	C-17	C17TDE	DEP	35LD31	1.42 EPR	185	1,662	3,606	1.17	0.00	89.8
13	9	C-17	C17VPS	PAT	35LC45	1.34 EPR	140	1,854	3,626	0.23	0.02	89.6
13	10	C-17	C17VPR	PAT	35LC44	1.34 EPR	140	1,854	3,626	1.22	0.13	89.6
14	1	C-17	C17VPA	PAT	17RC13	1.34 EPR	170	2,729	1,415	0.44	0.03	98.1
14	2	C-17	C17VPB	PAT	17RC16	1.34 EPR	170	2,752	1,770	1.62	0.16	96.2
14	3	KC-46X	46C4	PAT	17LC4	85.00 % N1	180	2,204	888	0.47	0.05	95.7
14	4	C-17	C17VPH	PAT	17LC16	1.34 EPR	170	2,420	2,789	14.61	1.42	92.5
14	5	C-17	C17VPG	PAT	17LC13	1.34 EPR	170	2,420	2,789	12.62	0.59	92.5
14	6	C-17	C17VPI	PAT	17LC17	1.34 EPR	170	2,420	2,789	3.91	0.26	92.5
14	7	C-17	C17VPC	PAT	17RC17	1.34 EPR	170	2,748	2,651	2.29	0.11	92.5
14	8	C-17	C17VPM	PAT	35LC13	1.20 EPR	160	2,900	1,758	0.23	0.02	90.0
14	9	C-17	C17A40	ARR	35LA32	1.10 EPR	180	2,900	1,758	0.30	0.21	86.5
14	10	C-17	C17TDD	DEP	17RD32	1.34 EPR	250	4,756	4,654	2.17	0.00	86.2
15	1	T-38C	T38C3	PAT	35LC12	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	2	T-38C	T38C4	PAT	35LC11	100.00 % RPM	165	2,289	971	0.24	0.00	106.3
15	3	C-17	C17VPO	PAT	35LC17	1.34 EPR	170	1,928	594	1.23	0.06	105.9
15	4	C-17	C17VPM	PAT	35LC13	1.34 EPR	170	1,973	636	0.23	0.02	105.2
15	5	C-17	C17VPN	PAT	35LC16	1.34 EPR	170	1,973	636	0.87	0.09	105.2
15	6	C-17	C17A24	ARR	17RA32	1.14 EPR	140	1,580	407	0.55	0.39	103.7
15	7	C-17	C17A35	ARR	17RA34	1.14 EPR	140	1,580	407	0.55	0.39	103.6
15	8	C-17	C17IPA	PAT	17RC11	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	9	C-17	C17IPB	PAT	17RC12	1.14 EPR	140	1,627	431	0.78	0.05	103.5
15	10	C-17	C17A18	ARR	17RA21	1.15 EPR	125	1,608	421	0.08	0.06	103.4
16	1	C-17	C17CPWA	PAT	17RCW	1.34 EPR	170	2,167	2,230	8.41	0.39	94.9
16	2	T-38C	T38C1	PAT	17RC11	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5

**Table C-1-1. Noise Contributors at Representative Locations Near Altus AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

Altus MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Dist. (ft)	Operations		SEL (dB)
										Day	Night	
16	3	T-38C	T38C2	PAT	17RC12	100.00 % RPM	165	2,330	3,767	0.45	0.00	90.5
16	4	T-38C	T38D1	DEP	17RD11	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	5	T-38C	T38D2	DEP	17RD12	100.00 % RPM	250	3,054	4,020	0.36	0.00	89.6
16	6	C-17	C17TDC	DEP	17RD31	1.42 EPR	250	2,270	3,761	2.17	0.00	88.8
16	7	C-17	C17TDD	DEP	17RD32	1.34 EPR	160	2,442	3,907	2.17	0.00	88.8
16	8	C-17	TC17D2	DEP	17RD12	1.34 EPR	160	2,459	3,803	0.06	0.00	88.7
16	9	C-17	TC17D1	DEP	17RD11	1.34 EPR	160	2,459	3,803	0.06	0.00	88.7
16	10	C-17	C17DB	DEP	17RD11	1.34 EPR	160	2,459	3,803	3.44	0.28	88.7

**Key:** ARR= Arrival; DEP= Departure; PAT= Closed Pattern.

Power Units: EPR: engine pressure ratio; N1 = engine speed at Location No. 1; NF = engine fan revolutions per minute; RPM = revolutions per minute.

**Source:** NOISEMAP Version 7.2.

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario**

Fairchild Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,010	2,725	0.04	0.00	113.5
1	2	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,207	3,589	0.05	0.00	103.7
1	3	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	4,987	0.11	0.00	101.4
1	4	F-18A/C	F18DB	DEP	23D03	95.00 % NC	0	2,462	4,987	0.16	0.00	97.9
1	5	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,745	2,202	0.16	0.00	97.9
1	6	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,340	2,925	0.01	0.00	97.0
1	7	C-9A	C9DB	DEP	23D04	2.00 EPR	0	2,462	4,987	0.02	0.00	95.9
1	8	C-9A	C9DA	DEP	05D04	2.00 EPR	200	4,124	2,789	0.01	0.00	95.7
1	9	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,692	2,194	0.11	0.00	95.0
1	10	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	94.9
2	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	5,269	3,005	0.11	0.00	112.6
2	2	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	3,164	1,252	0.05	0.00	103.2
2	3	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	3,015	1,174	0.04	0.00	101.1
2	4	F-18A/C	F18DB	DEP	23D03	94.00 % NC	300	6,571	4,341	0.16	0.00	99.5
2	5	F-16C	F16DB	DEP	23D04	90.00 % NC	350	5,391	3,193	0.02	0.00	94.8
2	6	C-9A	C9DB	DEP	23D04	1.80 EPR	250	5,164	2,906	0.02	0.00	91.2
2	7	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	12,559	0.04	0.00	90.9
2	8	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	90.1
2	9	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	90.0
2	10	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	90.0
3	1	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	5,742	0.04	0.00	110.6
3	2	EA-6B	EA6DB	DEP	23D03	99.50 % RPM	145	3,032	5,759	0.11	0.00	109.2
3	3	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	5,742	0.05	0.00	107.6
3	4	AH-1W	UH1I04	INT	UH1I04	n/a*	n/a*	n/a*	n/a*	0.19	0.01	104.5
3	5	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	3,994	5,918	0.16	0.00	103.2
3	6	F-16C	F16DA	DEP	05D04	91.50 % NC	0	2,462	5,742	0.01	0.00	98.0
3	7	F-16C	F16DB	DEP	23D04	91.00 % NC	300	3,586	5,830	0.02	0.00	94.5
3	4	AH-1W	UH1I02	INT	UH1I02	n/a*	n/a*	n/a*	n/a*	0.04	0.01	93.8
3	9	C-9A	C9DA	DEP	05D04	2.00 EPR	0	2,462	5,742	0.01	0.00	92.8
3	10	C-9A	C9DB	DEP	23D04	2.00 EPR	115	3,316	5,789	0.02	0.00	91.7
4	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	3,427	2,301	0.11	0.00	115.8
4	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	2,257	0.04	0.00	109.4
4	3	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,588	2,993	0.16	0.00	106.2
4	4	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	2,257	0.05	0.00	105.9
4	5	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	103.2
4	6	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	103.1
4	7	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0	103.1
4	8	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0	102.5
4	9	F-16C	F16DB	DEP	23D04	91.00 % NC	300	3,955	2,564	0.02	0.00	98.7
4	10	AH-1W	UH1A05	ARR	UH1A05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	98.0
5	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,258	2,181	0.04	0.00	115.6
5	2	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,837	883	0.16	0.00	105.8
5	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	105.2
5	4	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,470	3,301	0.05	0.00	104.3
5	5	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,763	849	0.11	0.00	103.8
5	6	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	102.2
5	7	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	6,292	0.11	0.00	99.2

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario (Continued)**

Fairchild Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
5	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,527	2,271	0.01	0.00	99.1
5	9	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	98.7
5	10	C-9A	C9DA	DEP	05D04	2.00 EPR	200	4,371	2,132	0.01	0.00	97.8
6	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,629	2,945	0.04	0.00	112.4
6	2	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,984	614	0.16	0.00	108.9
6	3	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,876	508	0.11	0.00	108.0
6	4	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	106.5
6	5	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	103.9
6	6	C-17	C17CD	PAT	23C2	70.00 % NC	150	2,512	178	0.12	0.00	102.4
6	7	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,865	3,992	0.05	0.00	101.6
6	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,825	2,459	0.01	0.00	97.9
6	9	AH-1W	UH1I03	DEP	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	97.9
6	10	C-9A	C9AB	ARR	23A01	1.35 EPR	135	3,000	630	0.02	0.00	96.2
7	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	3,555	3,174	0.11	0.00	112.4
7	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	3,391	0.04	0.00	104.9
7	3	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,723	3,767	0.16	0.00	103.9
7	4	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	3,391	0.05	0.00	102.2
7	5	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,039	3,375	0.02	0.00	96.1
7	6	C-9A	C9DB	DEP	23D04	2.00 EPR	115	3,784	3,260	0.02	0.00	94.7
7	7	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,597	2,966	0.05	0.00	94.0
7	8	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	93.5
7	9	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	93.5
7	10	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	93.5
8	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	4,463	2,055	0.11	0.00	116.3
8	2	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,889	455	0.05	0.00	111.2
8	3	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	2,803	368	0.04	0.00	110.5
8	4	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	5,680	3,295	0.16	0.00	104.3
8	5	C-17	C17CC	PAT	05C2	70.00 % NC	150	2,512	77	0.04	0.00	102.4
8	6	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,633	2,210	0.02	0.00	99.3
8	7	C-9A	C9AA	ARR	05A01	1.35 EPR	135	2,902	467	0.01	0.00	99.1
8	8	KC-135R	T135AA	ARR	05A01	66.50 % NF	150	2,766	331	0.15	0.02	98.3
8	9	F-16C	F16AA	ARR	05A01	80.00 % NC	160	2,803	368	0.01	0.00	98.0
8	10	C-17	C17AA	ARR	05A01	70.00 % NC	140	2,803	368	0.08	0.00	98.0
9	1	EA-6B	EA6DB	DEP	23D03	99.50 % RPM	145	3,055	4,405	0.11	0.00	109.8
9	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	4,366	0.04	0.00	107.2
9	3	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	4,366	0.05	0.00	104.3
9	4	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,046	4,649	0.16	0.00	103.0
9	5	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	99.8
9	6	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	99.6
9	7	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	99.6
9	8	AH-1W	UH1I01	INT	UH1I01	n/a*	n/a*	n/a*	n/a*	0.09	0.01	96.4
9	9	F-16C	F16DA	DEP	05D04	91.50 % NC	0	2,462	4,366	0.01	0.00	95.2
9	10	AH-1W	UH1A05	ARR	UH1A05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	95.0
10	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	3,638	2,194	0.04	0.00	116.0
10	2	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	2,820	0.11	0.00	109.7
10	3	F-18A/C	F18DB	DEP	23D03	95.00 % NC	0	2,462	2,820	0.16	0.00	106.8

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario (Continued)**

Fairchild Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
10	4	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	4,810	3,035	0.05	0.00	105.8
10	5	C-9A	C9DB	DEP	23D04	2.00 EPR	0	2,462	2,820	0.02	0.00	104.5
10	6	F-16C	F16DB	DEP	23D04	91.50 % NC	0	2,462	2,820	0.02	0.00	103.5
10	7	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,624	1,818	0.16	0.00	99.1
10	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,094	2,476	0.01	0.00	98.8
10	9	C-9A	C9DA	DEP	05D04	2.00 EPR	115	3,840	2,310	0.01	0.00	97.9
10	10	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,599	1,815	0.11	0.00	96.4
11	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	4,034	2,387	0.11	0.00	115.0
11	2	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	5,228	3,348	0.16	0.00	104.6
11	3	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,752	1,750	0.05	0.00	100.0
11	4	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	98.4
11	5	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	98.4
11	6	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	98.3
11	7	C-17	C17CD	PAT	23C2	89.60 % NC	190	3,036	519	0.12	0.00	98.3
11	8	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,353	2,610	0.02	0.00	98.0
11	9	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	2,697	1,740	0.04	0.00	97.3
11	10	C-9A	C9DB	DEP	23D04	2.00 EPR	200	4,141	2,459	0.02	0.00	96.8
12	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,108	3,243	0.04	0.00	112.9
12	2	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	112.8
12	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	111.2
12	4	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	103.6
12	5	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,273	4,016	0.05	0.00	103.2
12	6	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	5,513	0.11	0.00	100.1
12	7	AH-1W	UH1A04	ARR	UH1A04	n/a*	n/a*	n/a*	n/a*	0.72	0.04	99.2
12	8	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0.00	98.5
12	9	AH-1W	UH1C02	PAT	UH1C02	n/a*	n/a*	n/a*	n/a*	0.28	0.02	98.1
12	10	C-17	C17CC	PAT	05C2	89.60 % NC	190	3,044	436	0.04	0.00	97.2
13	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,189	1,929	0.04	0.00	117.3
13	2	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	110.7
13	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	109.9
13	4	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,385	3,099	0.05	0.00	105.3
13	5	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,793	941	0.16	0.00	105.3
13	6	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	104.0
13	7	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,729	917	0.11	0.00	103.1
13	8	AH-1W	UH1A06	ARR	UH1A06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	101.8
13	9	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	5,475	0.11	0.00	100.7
13	10	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0.00	100.5
Fairchild MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,010	2,724	0.04	0.00	113.9
1	2	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,207	3,588	0.05	0.00	103.6
1	3	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	4,987	0.11	0.00	101.9
1	4	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,745	2,202	0.16	0.00	98.0
1	5	F-18A/C	F18DB	DEP	23D03	95.00 % NC	0	2,462	4,987	0.16	0.00	97.9
1	6	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,340	2,923	0.01	0.00	97.0

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario (Continued)**

Fairchild MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	7	C-9A	C9DA	DEP	05D04	2.00 EPR	200	4,124	2,788	0.01	0.00	95.6
1	8	C-9A	C9DB	DEP	23D04	2.00 EPR	0	2,462	4,987	0.02	0.00	95.6
1	9	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,692	2,194	0.11	0.00	95.4
1	10	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	94.9
2	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	5,269	2,994	0.11	0.00	113.0
2	2	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	3,164	1,250	0.05	0.00	103.5
2	3	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	3,015	1,173	0.04	0.00	101.6
2	4	F-18A/C	F18DB	DEP	23D03	94.00 % NC	300	6,571	4,330	0.16	0.00	99.3
2	5	F-16C	F16DB	DEP	23D04	90.00 % NC	350	5,391	3,182	0.02	0.00	94.8
2	6	C-9A	C9DB	DEP	23D04	1.80 EPR	250	5,164	2,895	0.02	0.00	91.2
2	7	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	12,559	0.04	0.00	90.5
2	8	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	90.2
2	9	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	90.1
2	10	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	90.1
3	1	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	5,744	0.04	0.00	109.7
3	2	EA-6B	EA6DB	DEP	23D03	99.50 % RPM	145	3,032	5,759	0.11	0.00	108.2
3	3	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	5,744	0.05	0.00	106.4
3	4	AH-1W	UH1I04	INT	UH1I04	n/a*	n/a*	n/a*	n/a*	0.19	0.01	104.7
3	5	F-16C	F16DA	DEP	05D04	91.50 % NC	0	2,462	5,744	0.01	0.00	96.8
3	6	AH-1W	UH1I02	INT	UH1I02	n/a*	n/a*	n/a*	n/a*	0.04	0.01	94.5
3	7	F-16C	F16DB	DEP	23D04	91.00 % NC	300	3,586	5,830	0.02	0.00	91.6
3	8	C-9A	C9DA	DEP	05D04	2.00 EPR	0	2,462	5,744	0.01	0.00	91.6
3	9	C-9A	C9DB	DEP	23D04	2.00 EPR	115	3,316	5,788	0.02	0.00	90.3
3	10	KC-135R	T135DA	DEP	05D04	89.60 % NF	30	2,462	5,744	0.15	0.02	89.9
4	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	3,427	2,301	0.11	0.00	116.3
4	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	2,255	0.04	0.00	109.8
4	3	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,587	2,994	0.16	0.00	106.3
4	4	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	2,255	0.05	0.00	106.1
4	5	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	103.2
4	6	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	103.1
4	7	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0	103.1
4	8	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0	102.5
4	9	F-16C	F16DB	DEP	23D04	91.00 % NC	300	3,955	2,565	0.02	0.00	98.8
4	10	AH-1W	UH1A05	ARR	UH1A05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	98.0
5	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,258	2,181	0.04	0.00	116.2
5	2	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,837	883	0.16	0.00	106.1
5	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	105.2
5	4	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,470	3,301	0.05	0.00	104.2
5	5	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,763	849	0.11	0.00	104.2
5	6	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	102.2
5	7	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	6,292	0.11	0.00	100.2
5	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,527	2,271	0.01	0.00	99.3
5	9	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	98.7
5	10	C-9A	C9DA	DEP	05D04	2.00 EPR	200	4,370	2,132	0.01	0.00	97.9
6	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,630	2,941	0.04	0.00	112.8
6	2	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,984	610	0.16	0.00	109.2

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario (Continued)**

Fairchild MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
6	3	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,876	504	0.11	0.00	108.3
6	4	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	106.6
6	5	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	103.9
6	6	C-17	C17CD	PAT	23C2	70.00 % NC	150	2,512	175	0.12	0.00	102.6
6	7	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,865	3,988	0.05	0.00	101.4
6	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,825	2,455	0.01	0.00	98.1
6	9	AH-1W	UH1I03	DEP	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	97.9
6	10	C-9A	C9AB	ARR	23A01	1.35 EPR	135	3,000	625	0.02	0.00	97.4
7	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	3,555	3,174	0.11	0.00	112.7
7	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	3,394	0.04	0.00	105.3
7	3	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,723	3,768	0.16	0.00	103.8
7	4	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	3,394	0.05	0.00	102.3
7	5	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,039	3,376	0.02	0.00	96.0
7	6	C-9A	C9DB	DEP	23D04	2.00 EPR	115	3,784	3,261	0.02	0.00	94.5
7	7	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,597	2,970	0.05	0.00	93.9
7	8	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	93.5
7	9	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	93.5
7	10	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	93.5
8	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	4,463	2,047	0.11	0.00	116.9
8	2	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,889	446	0.05	0.00	111.5
8	3	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	2,803	359	0.04	0.00	111.0
8	4	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	5,680	3,286	0.16	0.00	104.3
8	5	C-17	C17CC	PAT	05C2	70.00 % NC	150	2,512	67	0.04	0.00	102.6
8	6	C-9A	C9AA	ARR	05A01	1.35 EPR	135	2,902	458	0.01	0.00	100.2
8	7	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,633	2,202	0.02	0.00	99.5
8	8	KC-135R	T135AA	ARR	05A01	66.50 % NF	150	2,766	322	0.15	0.02	98.7
8	9	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	7,246	0.04	0.00	98.5
8	10	C-17	C17AA	ARR	05A01	70.00 % NC	140	2,803	359	0.08	0.00	98.4
9	1	EA-6B	EA6DB	DEP	23D03	99.50 % RPM	145	3,055	4,405	0.11	0.00	109.8
9	2	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	4,363	0.04	0.00	107.2
9	3	F-18A/C	F18DA	DEP	05D03	95.00 % NC	0	2,462	4,363	0.05	0.00	103.9
9	4	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	4,046	4,649	0.16	0.00	102.7
9	5	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	99.8
9	6	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	99.6
9	7	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	99.6
9	8	AH-1W	UH1I01	INT	UH1I01	n/a*	n/a*	n/a*	n/a*	0.09	0.01	96.4
9	9	AH-1W	UH1A05	ARR	UH1A05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	95.0
9	10	F-16C	F16DA	DEP	05D04	91.50 % NC	0	2,462	4,363	0.01	0.00	94.9
10	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	3,638	2,193	0.04	0.00	116.5
10	2	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	2,820	0.11	0.00	110.4
10	3	F-18A/C	F18DB	DEP	23D03	95.00 % NC	0	2,462	2,820	0.16	0.00	106.9
10	4	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	4,810	3,034	0.05	0.00	105.8
10	5	C-9A	C9DB	DEP	23D04	2.00 EPR	0	2,462	2,820	0.02	0.00	104.5
10	6	F-16C	F16DB	DEP	23D04	91.50 % NC	0	2,462	2,820	0.02	0.00	103.5
10	7	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,624	1,818	0.16	0.00	99.3
10	8	F-16C	F16DA	DEP	05D04	91.00 % NC	300	4,094	2,475	0.01	0.00	98.9

**Table C-1-2. Noise Contributors at Representative Locations Near Fairchild AFB Under Baseline and MOB 1 Scenario (Continued)**

Fairchild MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
10	9	C-9A	C9DA	DEP	05D04	2.00 EPR	115	3,840	2,309	0.01	0.00	97.9
10	10	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,599	1,815	0.11	0.00	96.8
11	1	EA-6B	EA6DB	DEP	23D03	98.00 % RPM	250	4,034	2,390	0.11	0.00	115.5
11	2	F-18A/C	F18DB	DEP	23D03	96.70 % NC	250	5,228	3,351	0.16	0.00	104.6
11	3	EA-6B	EA6DA	DEP	05D03	99.00 % RPM	0	2,462	4,917	0.04	0.00	100.7
11	7	F-18A/C	F18AA	ARR	05A03	86.10 % NC	140	2,752	1,747	0.05	0.00	100.2
11	8	C-17	C17CD	PAT	23C2	89.60 % NC	190	3,036	524	0.12	0.00	99.5
11	9	F-16C	F16DB	DEP	23D04	91.00 % NC	300	4,353	2,613	0.02	0.00	98.1
11	4	AH-1W	UH1D06	DEP	UH1D06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	98.0
11	5	AH-1W	UH1D05	DEP	UH1D05	n/a*	n/a*	n/a*	n/a*	0.04	0.00	98.0
11	6	AH-1W	UH1D04	DEP	UH1D04	n/a*	n/a*	n/a*	n/a*	0.71	0.04	98.0
11	10	EA-6B	EA6AA	ARR	05A03	75.00 % RPM	160	2,697	1,736	0.04	0.00	97.8
12	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,108	3,243	0.04	0.00	113.2
12	2	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	113.0
12	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	111.1
12	4	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	103.6
12	5	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,272	4,015	0.05	0.00	102.9
12	6	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	5,513	0.11	0.00	100.5
12	7	AH-1W	UH1A04	ARR	UH1A04	n/a*	n/a*	n/a*	n/a*	0.72	0.04	99.2
12	4	C-17	C17CC	PAT	05C2	89.60 % NC	190	3,044	434	0.04	0.00	98.6
12	8	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0.00	98.5
12	9	AH-1W	UH1C02	PAT	UH1C02	n/a*	n/a*	n/a*	n/a*	0.28	0.02	98.1
13	1	EA-6B	EA6DA	DEP	05D03	98.00 % RPM	250	4,189	1,930	0.04	0.00	117.9
13	2	AH-1W	UH1D03	DEP	UH1D03	n/a*	n/a*	n/a*	n/a*	0.04	0.00	110.7
13	3	AH-1W	UH1D01	DEP	UH1D01	n/a*	n/a*	n/a*	n/a*	0.24	0.01	109.9
13	2	F-18A/C	F18AB	ARR	23A03	86.10 % NC	140	2,793	941	0.16	0.00	105.6
13	3	F-18A/C	F18DA	DEP	05D03	96.70 % NC	250	5,385	3,100	0.05	0.00	105.3
13	6	AH-1W	UH1I03	INT	UH1I03	n/a*	n/a*	n/a*	n/a*	0.28	0.02	104.0
13	4	EA-6B	EA6AB	ARR	23A03	75.00 % RPM	160	2,729	917	0.11	0.00	103.5
13	8	AH-1W	UH1A06	ARR	UH1A06	n/a*	n/a*	n/a*	n/a*	0.13	0.01	101.8
13	5	EA-6B	EA6DB	DEP	23D03	99.00 % RPM	0	2,462	5,475	0.11	0.00	101.7
13	10	AH-1W	UH1D02	DEP	UH1D02	n/a*	n/a*	n/a*	n/a*	0.01	0.00	100.5

**Key:** ARR= Arrival; DEP= Departure; INT= Interfacility; PAT= Closed Pattern; Power Units: EPR: engine pressure ratio; N1 = engine speed at Location No. 1; NC = core engine speed; RPM = revolutions per minute.

\* = Rotorcraft Noise Model (RNM) is a simulation-based model and does not report SEL based on a single point of closest approach.

**Source:** NOISEMAP Version 7.2 and RNM.

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario**

Grand Forks Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4,408	3,615	0.30	0.00	96.5
1	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4,609	3,831	0.00	0.15	94.5
1	3	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1,591	1,081	0.02	0.00	92.9
1	4	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1,591	1,081	0.03	0.00	92.1
1	5	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1,956	1,341	0.00	0.35	91.3
1	6	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1,422	984	0.07	0.01	90.0
1	7	C-130H&N&P	130C	ARR	35A3	650.00 C TIT	110	1,418	982	0.02	0.00	89.5
1	8	T-45	MQ4AB	ARR	35A11	85.20 % RPM	180	1,463	1,006	0.00	0.70	88.6
1	9	C-20	C-20-C	ARR	35A3	2400.00 LBS	150	1,418	982	0.03	0.00	87.6
1	10	C-130H&N&P	130B	DEP	17D1	932.00 C TIT	170	2,341	1,659	0.01	0.00	87.0
2	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4,077	3,312	0.30	0.00	97.3
2	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4,187	3,436	0.00	0.15	95.7
2	3	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1,388	1,022	0.02	0.00	93.6
2	4	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1,388	1,022	0.03	0.00	92.7
2	5	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1,675	1,184	0.00	0.35	92.5
2	6	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1,292	980	0.07	0.01	90.0
2	7	C-130H&N&P	130C	ARR	35A3	650.00 C TIT	110	1,289	979	0.02	0.00	89.3
2	8	T-45	MQ4AB	ARR	35A11	85.20 % RPM	180	1,321	992	0.00	0.70	88.7
2	9	C-130H&N&P	130B	DEP	17D1	977.00 C TIT	130	2,098	1,493	0.01	0.00	88.4
2	10	C-20	C-20-C	ARR	35A3	2400.00 LBS	150	1,289	979	0.03	0.00	87.6
3	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3,907	3,451	0.70	0.00	97.1
3	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	3,966	3,518	0.00	0.35	95.6
3	3	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1,771	1,857	0.00	0.15	89.5
3	4	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,247	1,668	0.00	0.30	89.1
3	5	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1,299	1,680	0.07	0.01	88.9
3	6	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1,299	1,680	0.04	0.00	88.4
3	7	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	130	1,973	1,959	0.02	0.00	86.4
3	8	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1,209	1,660	0.03	0.00	85.5
3	9	C-130H&N&P	130D	ARR	17A1	650.00 C TIT	110	1,207	1,660	0.01	0.00	84.7
3	10	C-21A	C21A	DEP	35D1	96.00 % NC	180	2,872	2,575	0.02	0.00	84.5
4	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	4,176	5,194	0.70	0.00	92.8
4	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	4,302	5,288	0.00	0.35	91.2
4	3	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	2,091	4,181	0.00	0.15	82.9
4	4	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	8,415	0.30	0.00	81.7
4	5	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,360	4,028	0.00	0.30	81.1
4	6	KC-135R	135DB	DEP	35D1	87.00 % NF	200	1,444	4,039	0.07	0.01	80.8
4	7	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	130	2,164	4,200	0.02	0.00	79.4
4	8	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	200	1,444	4,039	0.04	0.00	78.7
4	9	C-21A	C21A	DEP	35D1	96.00 % NC	180	3,104	4,579	0.02	0.00	78.6
4	10	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1,307	4,022	0.03	0.00	76.9
5	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3,903	3,187	0.70	0.00	97.7
5	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	3,961	3,257	0.00	0.35	96.2
5	3	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1,298	1,034	0.04	0.00	93.6
5	4	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,245	1,015	0.00	0.30	93.0
5	5	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1,298	1,034	0.07	0.01	92.8
5	6	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1,766	1,301	0.00	0.15	92.0
5	7	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1,207	1,002	0.03	0.00	89.7

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario (Continued)**

Grand Forks Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
5	8	C-130H&N&P	130D	ARR	17A1	650.00 C TIT	110	1,205	1,001	0.01	0.00	89.0
5	9	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	130	1,970	1,444	0.02	0.00	89.0
5	10	C-20	C-20-A	ARR	17A1	2400.00 LBS	150	1,205	1,001	0.02	0.00	87.3
6	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4,077	5,408	0.30	0.00	92.4
6	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4,188	5,485	0.00	0.15	90.9
6	3	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1,676	4,440	0.00	0.35	82.8
6	4	T-45	MQ4DB	DEP	35D8	100.00 % RPM	0	911	7,991	0.70	0.00	82.5
6	5	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1,388	4,400	0.03	0.00	79.8
6	6	C-130H&N&P	130B	DEP	17D1	977.00 C TIT	130	2,099	4,532	0.01	0.00	78.3
6	7	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1,388	4,400	0.02	0.00	77.6
6	8	C-21A	C21B	DEP	17D1	96.00 % NC	180	3,025	4,859	0.01	0.00	77.4
6	9	CESSNA-441 TPROP	MQ9CB PCCB	PAT	17C8	50.00 % RPM	85	1,911	1,276	1.58	1.05	76.7
6	10	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1,292	4,391	0.07	0.01	76.0
7	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3,814	9,974	0.70	0.00	85.1
7	2	T-45	MQ4CB	PAT	35C9	85.00 % RPM	200	6,911	8,248	0.00	0.35	83.4
7	3	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	578	0.30	0.00	79.3
7	4	T-45	MQ4CA	PAT	17C9	85.00 % RPM	200	6,911	8,248	0.00	0.15	77.7
7	5	CESSNA-441 TPROP	MQ9CB PCD	PAT	35C8	75.00 % RPM	150	1,911	1,091	3.68	2.45	77.5
7	6	CESSNA-441 TPROP	MQ9CB PCCB	PAT	17C8	50.00 % RPM	85	1,911	1,488	1.58	1.05	75.8
7	7	C-130H&N&P	130A	DEP	35D1	932.00 C TIT	170	7,013	6,604	0.02	0.00	74.6
7	8	KC-135R	135DB	DEP	35D1	87.00 % NF	250	9,996	9,537	0.07	0.01	72.3
7	9	T-41	MQ1ND ANG~2	PAT	35C8	75.00 % RPM	150	2,000	1,173	6.86	0.00	72.1
7	10	C-21A	C21A	DEP	35D1	96.00 % NC	180	9,133	8,637	0.02	0.00	71.9
8	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3,324	5,319	0.70	0.00	92.6
8	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	180	3,324	5,319	0.00	0.35	91.3
8	3	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	5,209	0.30	0.00	86.4
8	4	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1,307	4,705	0.00	0.15	84.8
8	5	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1,202	4,696	0.07	0.01	79.5
8	6	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	130	1,696	4,754	0.02	0.00	78.6
8	7	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,083	4,690	0.00	0.30	78.5
8	8	C-21A	C21A	DEP	35D1	96.00 % NC	180	2,534	4,967	0.02	0.00	77.7
8	9	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1,202	4,696	0.04	0.00	77.3
8	10	C-21A	C21B	DEP	17D1	96.00 % NC	0	911	5,209	0.01	0.00	74.0
9	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4,408	3,935	0.30	0.00	95.6
9	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4,608	4,134	0.00	0.15	93.7
9	3	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1,955	2,048	0.00	0.35	88.1
9	4	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1,591	1,887	0.03	0.00	87.5
9	5	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1,591	1,887	0.02	0.00	86.8
9	6	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1,421	1,833	0.07	0.01	84.8
9	7	C-130H&N&P	130B	DEP	17D1	932.00 C TIT	170	2,340	2,270	0.01	0.00	84.4
9	8	C-130H&N&P	130C	ARR	35A3	650.00 C TIT	110	1,418	1,832	0.02	0.00	84.1
9	9	T-45	MQ4AB	ARR	35A11	85.20 % RPM	180	1,463	1,845	0.00	0.70	83.8
9	10	C-21A	C21B	DEP	17D1	96.00 % NC	180	3,315	2,987	0.01	0.00	82.8
10	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	4,199	3,648	0.70	0.00	96.4

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario (Continued)**

Grand Forks Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
10	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	4,331	3,786	0.00	0.35	94.7
10	3	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,370	1,545	0.00	0.30	89.8
10	4	KC-135R	135DB	DEP	35D1	87.00 % NF	200	1,458	1,575	0.07	0.01	89.2
10	5	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	2,118	1,925	0.00	0.15	88.8
10	6	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	200	1,458	1,575	0.04	0.00	88.8
10	7	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1,315	1,529	0.03	0.00	86.3
10	8	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	130	2,180	1,959	0.02	0.00	86.0
10	9	C-130H&N&P	130D	ARR	17A1	650.00 C TIT	110	1,312	1,528	0.01	0.00	85.6
10	10	C-21A	C21A	DEP	35D1	96.00 % NC	180	3,124	2,686	0.02	0.00	84.0
11	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	2,953	3,313	0.70	0.00	97.4
11	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	180	2,953	3,313	0.00	0.35	96.3
11	3	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	2,666	0.30	0.00	91.9
11	4	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1,085	2,543	0.00	0.15	89.6
11	5	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1,156	2,549	0.07	0.01	85.2
11	6	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	105	1,570	2,624	0.02	0.00	84.3
11	7	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1,156	2,549	0.04	0.00	83.8
11	8	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1,005	2,538	0.00	0.30	83.6
11	9	C-21A	C21B	DEP	17D1	96.00 % NC	0	911	2,666	0.01	0.00	83.5
11	10	C-21A	C21A	DEP	35D1	96.00 % NC	180	2,373	2,939	0.02	0.00	83.3
Grand Forks MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4408	3615	0.30	0.00	96.5
1	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4609	3831	0.00	0.15	94.5
1	3	KC-46X	46DA	DEP	17D1	92.00 % N1	185	1687	1142	2.04	0.04	93.1
1	4	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1591	1081	0.02	0.00	92.9
1	5	KC-46X	46CG	PAT	35C2	65.00 % N1	170	1453	559	16.11	1.79	92.4
1	6	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1591	1081	0.03	0.00	92.1
1	7	KC-46X	46CI	PAT	35C6	60.00 % N1	240	1399	474	6.04	0.67	91.8
1	8	KC-46X	46AF	ARR	35A6	65.00 % N1	170	1342	624	0.59	0.07	91.6
1	9	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1956	1341	0.00	0.35	91.3
1	10	KC-46X	46AG	ARR	35A8	65.00 % N1	180	1397	738	0.71	0.08	90.5
2	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4077	3312	0.30	0.00	97.3
2	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4187	3436	0.00	0.15	95.7
2	3	KC-46X	46DA	DEP	17D1	92.00 % N1	185	1530	1095	2.04	0.04	93.7
2	4	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1388	1022	0.02	0.00	93.6
2	5	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1388	1022	0.03	0.00	92.7
2	6	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1675	1184	0.00	0.35	92.5
2	7	KC-46X	46CE	PAT	17C7	85.00 % N1	190	2116	1286	2.59	0.29	91.2
2	8	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1292	980	0.07	0.01	90.0
2	9	KC-46X	46CC	PAT	17C5	85.00 % N1	200	1734	1431	5.18	0.58	89.5
2	10	C-130H&N&P	130C	ARR	35A3	650.00 C TIT	110	1289	979	0.02	0.00	89.3
3	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3907	3451	0.70	0.00	97.1
3	2	KC-46X	46CG	PAT	35C2	85.00 % N1	200	1469	799	16.11	1.79	95.9

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario (Continued)**

Grand Forks MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
3	3	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	3966	3518	0.00	0.35	95.6
3	4	KC-46X	46CF	PAT	35C1	88.00 % N1	200	1676	806	11.69	1.30	95.4
3	5	KC-46X	46DC	DEP	35D1	92.00 % N1	160	1299	1680	4.76	0.09	89.7
3	6	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1771	1857	0.00	0.15	89.5
3	7	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1247	1668	0.00	0.30	89.1
3	8	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1299	1680	0.07	0.01	88.9
3	9	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1299	1680	0.04	0.00	88.4
3	10	KC-46X	46CH	PAT	35C5	85.00 % N1	200	1668	1772	12.08	1.34	87.9
4	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	4176	5194	0.70	0.00	92.8
4	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	4302	5288	0.00	0.35	91.2
4	3	KC-46X	46CF	PAT	35C1	88.00 % N1	200	1878	1488	11.69	1.30	89.8
4	4	KC-46X	46CG	PAT	35C2	85.00 % N1	200	1555	1629	16.11	1.79	88.1
4	5	KC-46X	46DD	DEP	35D7	92.00 % N1	200	3361	2505	1.31	0.00	85.2
4	6	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	2091	4181	0.00	0.15	82.9
4	7	KC-46X	46CI	PAT	35C6	85.00 % N1	190	1635	2912	6.04	0.67	82.8
4	8	KC-46X	46CH	PAT	35C5	85.00 % N1	200	2018	2905	12.08	1.34	82.3
4	9	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	8415	0.30	0.00	81.7
4	10	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1360	4028	0.00	0.30	81.1
5	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3903	3187	0.70	0.00	97.7
5	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	3961	3257	0.00	0.35	96.2
5	3	KC-46X	46DC	DEP	35D1	92.00 % N1	160	1298	1034	4.76	0.09	94.7
5	4	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	160	1298	1034	0.04	0.00	93.6
5	5	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1245	1015	0.00	0.30	93.0
5	6	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1298	1034	0.07	0.01	92.8
5	7	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1766	1301	0.00	0.15	92.0
5	8	KC-46X	46CH	PAT	35C5	85.00 % N1	200	1647	1230	12.08	1.34	91.3
5	9	KC-46X	46CJ	PAT	35C7	85.00 % N1	190	1980	1302	6.04	0.67	91.2
5	10	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1207	1002	0.03	0.00	89.7
6	1	KC-46X	46CB	PAT	17C2	85.00 % N1	200	1562	1001	6.91	0.77	93.9
6	2	KC-46X	46CA	PAT	17C1	85.00 % N1	200	1891	1093	5.01	0.56	93.0
6	3	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4077	5408	0.30	0.00	92.4
6	4	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4188	5485	0.00	0.15	90.9
6	5	KC-46X	46CD	PAT	17C6	85.00 % N1	190	1641	2164	2.59	0.29	86.3
6	6	KC-46X	46DB	DEP	17D7	92.00 % N1	200	3360	2452	0.56	0.00	86.1
6	7	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1676	4440	0.00	0.35	82.8
6	8	T-45	MQ4DB	DEP	35D8	100.00 % RPM	0	911	7991	0.70	0.00	82.5
6	9	KC-46X	46CC	PAT	17C5	85.00 % N1	200	1992	3633	5.18	0.58	79.8
6	10	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1388	4400	0.03	0.00	79.8
7	1	KC-46X	46CG	PAT	35C2	85.00 % N1	200	1747	1062	16.11	1.79	93.9
7	2	KC-46X	46CI	PAT	35C6	85.00 % N1	190	1822	1063	6.04	0.67	93.9

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario (Continued)**

Grand Forks MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
7	3	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3814	9974	0.70	0.00	85.1
7	4	KC-46X	46CF	PAT	35C1	88.00 % N1	200	2276	2286	11.69	1.30	85.0
7	5	T-45	MQ4CB	PAT	35C9	85.00 % RPM	200	6911	8248	0.00	0.35	83.4
7	6	KC-46X	46DD	DEP	35D7	92.00 % N1	200	3651	3616	1.31	0.00	82.7
7	7	KC-46X	46AC	ARR	17A8	65.00 % N1	200	1911	1833	0.30	0.03	80.8
7	8	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	10578	0.30	0.00	79.3
7	9	T-45	MQ4CA	PAT	17C9	85.00 % RPM	200	6911	8248	0.00	0.15	77.7
7	10	KC-46X	46AB	ARR	17A6	65.00 % N1	190	1910	2662	0.25	0.03	77.6
8	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	3324	5319	0.70	0.00	92.6
8	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	180	3324	5319	0.00	0.35	91.3
8	3	KC-46X	46CI	PAT	35C6	85.00 % N1	190	1596	2407	6.04	0.67	86.7
8	4	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	5209	0.30	0.00	86.4
8	5	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1307	4705	0.00	0.15	84.8
8	6	KC-46X	46AF	ARR	35A6	60.00 % N1	220	2052	1333	0.59	0.07	82.1
8	7	KC-46X	46DD	DEP	35D7	92.00 % N1	185	2322	4486	1.31	0.00	81.9
8	8	KC-46X	46CG	PAT	35C2	85.00 % N1	200	1508	3735	16.11	1.79	80.1
8	9	KC-46X	46CF	PAT	35C1	88.00 % N1	200	1676	3990	11.69	1.30	79.8
8	10	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1202	4696	0.07	0.01	79.5
9	1	T-45	MQ4DA	DEP	17D8	100.00 % RPM	150	4408	3935	0.30	0.00	95.6
9	2	T-45	MQ4CA	PAT	17C9	100.00 % RPM	200	4608	4134	0.00	0.15	93.7
9	3	T-45	MQ4CB	PAT	35C9	88.00 % RPM	180	1955	2048	0.00	0.35	88.1
9	4	KC-46X	46CE	PAT	17C7	85.00 % N1	190	2364	1646	2.59	0.29	87.9
9	5	KC-135R	135DA	DEP	17D1	87.00 % NF	200	1591	1887	0.03	0.00	87.5
9	6	KC-46X	46DA	DEP	17D1	92.00 % N1	185	1687	1923	2.04	0.04	87.5
9	7	KC-10A	KC-10-B	DEP	17D1	87.00 % N1	200	1591	1887	0.02	0.00	86.8
9	8	KC-135R	135AB	ARR	35A3	65.00 % NF	150	1421	1833	0.07	0.01	84.8
9	9	C-130H&N&P	130B	DEP	17D1	932.00 C TIT	170	2340	2270	0.01	0.00	84.4
9	10	C-130H&N&P	130C	ARR	35A3	650.00 C TIT	110	1418	1832	0.02	0.00	84.1
10	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	4199	3648	0.70	0.00	96.4
10	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	200	4331	3786	0.00	0.35	94.7
10	3	KC-46X	46DC	DEP	35D1	92.00 % N1	185	1458	1575	4.76	0.09	90.1
10	4	KC-46X	46CJ	PAT	35C7	85.00 % N1	190	2229	1454	6.04	0.67	89.9
10	5	T-45	MQ4AA	ARR	17A11	88.00 % RPM	180	1370	1545	0.00	0.30	89.8
10	6	KC-135R	135DB	DEP	35D1	87.00 % NF	200	1458	1575	0.07	0.01	89.2
10	7	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	2118	1925	0.00	0.15	88.8
10	8	KC-10A	KC-10-D	DEP	35D1	87.00 % N1	200	1458	1575	0.04	0.00	88.8
10	9	KC-46X	46CE	PAT	17C7	65.00 % N1	180	1302	1167	2.59	0.29	86.5
10	10	KC-135R	135AA	ARR	17A1	65.00 % NF	150	1315	1529	0.03	0.00	86.3
11	1	T-45	MQ4DB	DEP	35D8	100.00 % RPM	150	2953	3313	0.70	0.00	97.4
11	2	T-45	MQ4CB	PAT	35C9	100.00 % RPM	180	2953	3313	0.00	0.35	96.3
11	3	T-45	MQ4DA	DEP	17D8	100.00 % RPM	0	911	2666	0.30	0.00	91.9
11	4	T-45	MQ4CA	PAT	17C9	88.00 % RPM	180	1085	2543	0.00	0.15	89.6
11	5	KC-46X	46CI	PAT	35C6	85.00 % N1	190	1441	2051	6.04	0.67	88.4

**Table C-1-3. Noise Contributors at Representative Locations Near Grand Forks AFB  
Under Baseline and MOB 1 Scenario (Continued)**

Grand Forks MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
11	6	KC-46X	46DD	DEP	35D7	92.00 % N1	185	1329	2575	1.31	0.00	86.1
11	7	KC-135R	135DB	DEP	35D1	87.00 % NF	160	1156	2549	0.07	0.01	85.2
11	8	KC-46X	46DC	DEP	35D1	92.00 % N1	160	1149	2548	4.76	0.09	84.9
11	9	C-130H&N&P	130A	DEP	35D1	977.00 C TIT	105	1570	2624	0.02	0.00	84.3
11	10	KC-46X	46CF	PAT	35C1	88.00 % N1	200	1330	2568	11.69	1.30	84.2

**Key:** Power Units: C TIT = Turbine Inlet Temperature in Celsius; LBS= Pounds of Thrust; N1 = engine speed at Location No. 1; NC = core engine speed; NF = engine fan revolutions per minute; RPM = revolutions per minute.

**Source:** NOISEMAP Version 7.2.

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios**

McConnell Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	250	1,811	4,552	1.19	0.04	94.2
1	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,215	5,429	0.38	0.00	93.9
1	3	B-747-20A	747-D2	DEP	9RD4	34530.00 LBS	153	3,001	4,845	0.15	0.00	86.7
1	4	T-38C	T38C-DS	DEP	9RD4	95.00 % RPM	250	3,089	4,889	1.19	0.04	85.9
1	5	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	150	1,646	5,358	0.16	0.00	82.8
1	6	T-38C	T38C-DR	DEP	1LD1	100.00 % RPM	0	1,371	6,911	0.51	0.02	82.8
1	7	F-16C	F16C-DJ	DEP	1LD1	93.00 % NC	0	1,371	6,911	0.51	0.02	82.4
1	8	A-10A	A10A-DB	DEP	9RD4	6700.00 NF	160	4,063	5,402	1.19	0.04	81.0
1	9	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,680	4,538	2.35	0.57	80.8
1	10	KC-135R	135B	DEP	9RD4	89.60 % NF	160	2,283	4,634	1.19	0.04	80.6
2	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,346	1,015	0.51	0.02	107.5
2	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,397	2,689	0.16	0.00	100.7
2	3	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,677	345	0.37	0.01	98.9
2	4	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,993	657	0.15	0.00	96.3
2	5	KC-135R	9RCB	PAT	9RC1	65.00 % NF	180	1,800	466	4.27	1.21	95.2
2	6	KC-135R	19RAE	ARR	9RA4	70.00 % NF	145	2,007	671	0.25	0.07	94.1
2	7	KC-135R	19RAD	ARR	9RA3	70.00 % NF	145	2,007	671	1.23	0.35	94.1
2	8	KC-135R	19RAB	ARR	9RA1	70.00 % NF	145	2,007	671	0.34	0.09	94.1
2	9	KC-135R	19RAA	ARR	9RA2	70.00 % NF	145	2,007	671	1.05	0.30	94.1
2	10	KC-135R	135C	ARR	9RA2	66.50 % NF	160	1,992	656	1.19	0.04	93.1
3	1	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	240	2,999	4,792	0.16	0.00	94.7
3	2	KC-135R	1RCB	PAT	1RC2	80.00 % NF	170	2,621	1,260	0.13	0.06	89.4
3	3	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,759	8,316	0.51	0.02	86.9
3	4	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	240	3,000	4,792	0.38	0.00	83.4
3	5	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,774	8,426	0.51	0.02	81.5
3	6	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,849	8,434	0.07	0.00	80.9
3	7	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,081	1.19	0.04	79.3
3	8	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,871	3,978	2.35	0.57	79.0
3	9	KC-135R	9LCB	PAT	9LC2	70.00 % NF	185	2,999	4,793	0.24	0.11	78.4
3	10	KC-135R	135C1	PAT	1RC1	70.00 % NF	180	3,000	4,792	0.33	0.00	77.4
4	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,987	4,272	0.51	0.02	94.6
4	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,291	5,297	0.16	0.00	93.6
4	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,181	4,608	0.07	0.00	85.8
4	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,666	4,848	0.51	0.02	83.5
4	5	KC-135R	135D	DEP	1LD1	89.60 % NF	200	2,371	4,347	0.51	0.02	81.0
4	6	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,840	4,252	0.15	0.00	80.9
4	7	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,773	5,068	0.38	0.00	80.7
4	8	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,059	1.19	0.04	80.3
4	9	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	4,928	5,679	0.51	0.02	80.2
4	10	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,674	4,235	0.37	0.01	80.0
5	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,776	3,715	0.51	0.02	96.2
5	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,172	4,595	0.16	0.00	95.9

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

McConnell Baseline												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
5	3	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,898	4,016	0.07	0.00	88.9
5	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,874	4,017	0.51	0.02	88.6
5	5	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	150	1,602	4,523	0.38	0.00	84.9
5	6	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	5,569	1.19	0.04	84.5
5	7	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	3,744	4,494	0.51	0.02	83.2
5	8	KC-135R	135D	DEP	1LD1	89.60 % NF	160	2,179	3,788	0.51	0.02	82.6
5	9	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,639	3,701	0.15	0.00	81.9
5	10	F-16C	F16C-DK	DEP	9RD4	93.00 % NC	0	1,371	5,569	1.19	0.04	81.0
6	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,519	3,686	0.16	0.00	97.6
6	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,771	3,940	0.51	0.02	95.3
6	3	KC-135R	19LAD	ARR	9LA4	65.00 % NF	160	2,403	1,091	0.02	0.01	89.2
6	4	KC-135R	19LAB	ARR	9LA2	65.00 % NF	160	2,403	1,091	0.11	0.05	89.1
6	5	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,453	4,233	0.07	0.00	84.5
6	6	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	2,174	3,761	0.15	0.00	82.7
6	7	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	2,069	2,931	0.38	0.00	82.4
6	8	KC-135R	9LCB	PAT	9LC2	70.00 % NF	165	2,180	3,085	0.24	0.11	82.3
6	9	KC-135R	135D	DEP	1LD1	89.60 % NF	250	2,398	3,818	0.51	0.02	81.7
6	10	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,680	3,683	0.37	0.01	81.6
7	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,528	3,331	0.16	0.00	101.0
7	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,992	5,488	0.51	0.02	92.0
7	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,182	5,748	0.07	0.00	83.8
7	4	KC-135R	135C1	PAT	1RC1	84.70 % NF	180	2,869	3,300	0.33	0.00	83.2
7	5	KC-135R	9LCB	PAT	9LC2	70.00 % NF	165	2,072	3,616	0.24	0.11	82.3
7	6	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,674	5,943	0.51	0.02	81.9
7	7	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,774	4,642	0.38	0.00	81.8
7	8	KC-135R	1RCA	PAT	1RC1	80.00 % NF	200	2,869	3,300	2.73	0.94	81.6
7	9	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,871	3,884	2.35	0.57	79.2
7	10	KC-135R	19LAD	ARR	9LA4	65.00 % NF	145	1,822	4,647	0.02	0.01	79.1
8	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	325	2,629	1,884	1.19	0.04	102.4
8	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,456	3,552	0.38	0.00	97.8
8	3	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,870	640	2.35	0.57	95.1
8	4	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	180	2,016	877	0.16	0.00	92.3
8	5	KC-135R	1RAC	ARR	1RA1	70.00 % NF	145	2,116	962	0.29	0.08	91.3
8	6	B-747-20A	747-A1	ARR	1LA3	6340.00 LBS	131	2,114	1,553	0.07	0.00	91.0
8	7	KC-135R	135C1	PAT	1RC1	65.00 % NF	150	2,044	900	0.33	0.00	90.6
8	8	KC-135R	1RCA	PAT	1RC1	65.00 % NF	150	2,044	900	2.73	0.94	90.6
8	9	KC-135R	1RAA	ARR	1RA5	65.00 % NF	160	2,096	945	0.91	0.26	90.2
8	10	B-747-20A	747-D2	DEP	9RD4	23954.00 LBS	181	3,403	2,491	0.15	0.00	89.5

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

McConnell FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	250	1,811	4,552	1.19	0.04	94.2
1	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,215	5,429	0.38	0.00	93.9
1	3	B-747-20A	747-D2	DEP	9RD4	34530.00 LBS	153	3,001	4,845	0.15	0.00	86.7
1	4	T-38C	T38C-DS	DEP	9RD4	95.00 % RPM	250	3,089	4,889	1.19	0.04	85.9
1	5	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	150	1,646	5,358	0.16	0.00	82.8
1	6	T-38C	T38C-DR	DEP	1LD1	100.00 % RPM	0	1,371	6,911	0.51	0.02	82.8
1	7	F-16C	F16C-DJ	DEP	1LD1	93.00 % NC	0	1,371	6,911	0.51	0.02	82.4
1	8	A-10A	A10A-DB	DEP	9RD4	6700.00 NF	160	4,063	5,402	1.19	0.04	81.0
1	9	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,680	4,538	2.35	0.57	80.8
1	10	KC-135R	135B	DEP	9RD4	89.60 % NF	160	2,283	4,634	1.19	0.04	80.6
2	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,346	1,015	0.51	0.02	107.5
2	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,397	2,689	0.16	0.00	100.7
2	3	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,677	345	0.37	0.01	98.9
2	4	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,993	657	0.15	0.00	96.3
2	5	KC-135R	9RCB	PAT	9RC1	65.00 % NF	180	1,800	466	4.27	1.21	95.2
2	6	KC-135R	19RAE	ARR	9RA4	70.00 % NF	145	2,007	671	0.25	0.07	94.1
2	7	KC-135R	19RAD	ARR	9RA3	70.00 % NF	145	2,007	671	1.23	0.35	94.1
2	8	KC-135R	19RAB	ARR	9RA1	70.00 % NF	145	2,007	671	0.34	0.09	94.1
2	9	KC-135R	19RAA	ARR	9RA2	70.00 % NF	145	2,007	671	1.05	0.30	94.1
2	10	KC-135R	135C	ARR	9RA2	66.50 % NF	160	1,992	656	1.19	0.04	93.1
3	1	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	240	2,999	4,792	0.16	0.00	94.7
3	2	KC-135R	1RCB	PAT	1RC2	80.00 % NF	170	2,621	1,260	0.13	0.06	89.4
3	3	KC-46X	46RCD	PAT	1RC3	85.00 % N1	180	2,214	1,510	0.46	0.10	88.5
3	4	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,759	8,316	0.51	0.02	86.9
3	5	KC-46X	46RCB	PAT	1RC2	85.00 % N1	190	3,131	1,764	2.30	0.50	85.5
3	6	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	240	3,000	4,792	0.38	0.00	83.4
3	7	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,774	8,426	0.51	0.02	81.5
3	8	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,849	8,434	0.07	0.00	80.9
3	9	KC-46X	46RDM	DEP	1RD4	92.00 % N1	200	3,887	4,827	1.27	1.77	79.7
3	10	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,081	1.19	0.04	79.3
4	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,987	4,272	0.51	0.02	94.6
4	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,291	5,297	0.16	0.00	93.6
4	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,181	4,608	0.07	0.00	85.8
4	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,666	4,848	0.51	0.02	83.5
4	5	KC-135R	135D	DEP	1LD1	89.60 % NF	200	2,371	4,347	0.51	0.02	81.0
4	6	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,840	4,252	0.15	0.00	80.9
4	7	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,773	5,068	0.38	0.00	80.7
4	8	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,059	1.19	0.04	80.3
4	9	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	4,928	5,679	0.51	0.02	80.2
4	10	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,674	4,235	0.37	0.01	80.0

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

McConnell FTU												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
5	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,776	3,715	0.51	0.02	96.2
5	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,172	4,595	0.16	0.00	95.9
5	3	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,898	4,016	0.07	0.00	88.9
5	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,874	4,017	0.51	0.02	88.6
5	5	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	150	1,602	4,523	0.38	0.00	84.9
5	6	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	5,569	1.19	0.04	84.5
5	7	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	3,744	4,494	0.51	0.02	83.2
5	8	KC-135R	135D	DEP	1LD1	89.60 % NF	160	2,179	3,788	0.51	0.02	82.6
5	9	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,639	3,701	0.15	0.00	81.9
5	10	F-16C	F16C-DK	DEP	9RD4	93.00 % NC	0	1,371	5,569	1.19	0.04	81.0
6	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,519	3,686	0.16	0.00	97.6
6	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,771	3,940	0.51	0.02	95.3
6	3	KC-135R	19LAD	ARR	9LA4	65.00 % NF	160	2,403	1,091	0.02	0.01	89.2
6	4	KC-135R	19LAB	ARR	9LA2	65.00 % NF	160	2,403	1,091	0.11	0.05	89.1
6	5	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,453	4,233	0.07	0.00	84.5
6	6	KC-46X	46LAM	ARR	9LA2	60.00 % N1	180	2,455	1,148	0.59	0.35	83.2
6	7	KC-46X	46LAK	ARR	9LA4	60.00 % N1	180	2,455	1,148	0.39	0.24	83.2
6	8	KC-46X	46LAH	ARR	9LA6	60.00 % N1	180	2,125	1,164	0.82	0.49	82.8
6	9	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	2,174	3,761	0.15	0.00	82.7
6	10	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	2,069	2,931	0.38	0.00	82.4
7	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,528	3,331	0.16	0.00	101.0
7	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,992	5,488	0.51	0.02	92.0
7	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,182	5,748	0.07	0.00	83.8
7	4	KC-46X	46RDM	DEP	1RD4	92.00 % N1	200	3,814	2,603	1.27	1.77	83.7
7	5	KC-46X	46RCC	PAT	1RC4	90.00 % N1	190	2,959	2,764	0.46	0.10	83.5
7	6	KC-135R	135C1	PAT	1RC1	84.70 % NF	180	2,869	3,300	0.33	0.00	83.2
7	7	KC-135R	9LCB	PAT	9LC2	70.00 % NF	165	2,072	3,616	0.24	0.11	82.3
7	8	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,674	5,943	0.51	0.02	81.9
7	9	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,774	4,642	0.38	0.00	81.8
7	10	KC-46X	46RCD	PAT	1RC3	85.00 % N1	180	2,114	3,079	0.46	0.10	81.7
8	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	325	2,629	1,884	1.19	0.04	102.4
8	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,456	3,552	0.38	0.00	97.8
8	3	KC-135R	9RCC	PAT	9RC2	70.00 % NF	145	1,870	640	2.35	0.57	95.1
8	4	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	180	2,016	877	0.16	0.00	92.3
8	5	KC-135R	1RAC	ARR	1RA1	70.00 % NF	145	2,116	962	0.29	0.08	91.3
8	6	B-747-20A	747-A1	ARR	1LA3	6340.00 LBS	131	2,114	1,553	0.07	0.00	91.0
8	7	KC-135R	135C1	PAT	1RC1	65.00 % NF	150	2,044	900	0.33	0.00	90.6
8	8	KC-135R	1RCA	PAT	1RC1	65.00 % NF	150	2,044	900	2.73	0.94	90.6
8	9	KC-135R	1RAA	ARR	1RA5	65.00 % NF	160	2,096	945	0.91	0.26	90.2
8	10	B-747-20A	747-D2	DEP	9RD4	23954.00 LBS	181	3,403	2,491	0.15	0.00	89.5

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

McConnell MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
1	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	250	1,811	4,552	1.19	0.04	94.2
1	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,215	5,429	0.38	0.00	93.9
1	3	B-747-20A	747-D2	DEP	9RD4	34530.00 LBS	153	3,001	4,845	0.15	0.00	86.7
1	4	T-38C	T38C-DS	DEP	9RD4	95.00 % RPM	250	3,089	4,889	1.19	0.04	85.9
1	5	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	150	1,646	5,358	0.16	0.00	82.8
1	6	T-38C	T38C-DR	DEP	1LD1	100.00 % RPM	0	1,371	6,911	0.51	0.02	82.8
1	7	F-16C	F16C-DJ	DEP	1LD1	93.00 % NC	0	1,371	6,911	0.51	0.02	82.4
1	8	A-10A	A10A-DB	DEP	9RD4	6700.00 NF	160	4,063	5,402	1.19	0.04	81.0
1	9	KC-135R	135B	DEP	9RD4	89.60 % NF	160	2,283	4,634	1.19	0.04	80.6
1	10	B-747-20A	747-A1	ARR	1LA3	6340.00 LBS	131	1,694	4,540	0.07	0.00	79.9
2	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,346	1,015	0.51	0.02	107.5
2	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,397	2,689	0.16	0.00	100.7
2	3	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,677	345	0.37	0.01	98.9
2	4	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,993	657	0.15	0.00	96.3
2	5	KC-135R	135C	ARR	9RA2	66.50 % NF	160	1,992	656	1.19	0.04	93.1
2	6	C-130H&N&P	130HAA	ARR	9RA2	650.00 C TIT	110	1,991	655	0.37	0.01	92.9
2	7	KC-135R	135D	DEP	1LD1	89.60 % NF	200	2,371	1,032	0.51	0.02	92.8
2	8	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,908	934	0.38	0.00	91.8
2	9	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,305	1,967	0.07	0.00	91.4
2	10	T-38C	T38C	ARR	9RA2	88.00 % RPM	160	1,992	656	1.19	0.04	90.8
3	1	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	240	2,999	4,792	0.16	0.00	94.7
3	2	KC-46X	46RCD	PAT	1RC3	85.00 % N1	180	2,214	1,510	2.59	0.29	88.5
3	3	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,759	8,316	0.51	0.02	86.9
3	4	KC-46X	46RCB	PAT	1RC2	85.00 % N1	190	3,131	1,764	5.18	0.58	85.5
3	5	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	240	3,000	4,792	0.38	0.00	83.4
3	6	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,774	8,426	0.51	0.02	81.5
3	7	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,849	8,434	0.07	0.00	80.9
3	8	KC-46X	46RDM	DEP	1RD4	92.00 % N1	200	3,887	4,827	0.56	0.00	79.7
3	9	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,081	1.19	0.04	79.3
3	10	KC-135R	135C1	PAT	1RC1	70.00 % NF	180	3,000	4,792	0.33	0.00	77.4
4	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,987	4,272	0.51	0.02	94.6
4	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,291	5,297	0.16	0.00	93.6
4	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,181	4,608	0.07	0.00	85.8
4	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,666	4,848	0.51	0.02	83.5
4	5	KC-135R	135D	DEP	1LD1	89.60 % NF	200	2,371	4,347	0.51	0.02	81.0
4	6	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,840	4,252	0.15	0.00	80.9
4	7	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,773	5,068	0.38	0.00	80.7
4	8	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	9,059	1.19	0.04	80.3
4	9	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	4,928	5,679	0.51	0.02	80.2
4	10	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,674	4,235	0.37	0.01	80.0
5	1	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	250	1,776	3,715	0.51	0.02	96.2
5	2	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,172	4,595	0.16	0.00	95.9

**Table C-1-4. Noise Contributors at Representative Locations Near McConnell AFB Under Baseline, FTU and MOB 1 Scenarios (Continued)**

McConnell MOB 1												
Point	Rank	Aircraft	Profile	Op Type	Track	Engine Power	Airspeed (KIAS)	Altitude (ft MSL)	Slant Distance (ft)	Operations		SEL (dB)
										Day	Night	
5	3	B-747-20A	747-D1	DEP	1LD1	34530.00 LBS	153	2,898	4,016	0.07	0.00	88.9
5	4	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	2,874	4,017	0.51	0.02	88.6
5	5	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	150	1,602	4,523	0.38	0.00	84.9
5	6	T-38C	T38C-DS	DEP	9RD4	100.00 % RPM	0	1,371	5,569	1.19	0.04	84.5
5	7	A-10A	A10A-DA	DEP	1LD1	6700.00 NF	160	3,744	4,494	0.51	0.02	83.2
5	8	KC-135R	135D	DEP	1LD1	89.60 % NF	160	2,179	3,788	0.51	0.02	82.6
5	9	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	1,639	3,701	0.15	0.00	81.9
5	10	F-16C	F16C-DK	DEP	9RD4	93.00 % NC	0	1,371	5,569	1.19	0.04	81.0
6	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,519	3,686	0.16	0.00	97.6
6	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	2,771	3,940	0.51	0.02	95.3
6	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,453	4,233	0.07	0.00	84.5
6	4	KC-46X	46LAH	ARR	9LA6	60.00 % N1	160	2,229	119	0.59	0.07	84.2
6	5	KC-46X	46LAM	ARR	9LA2	60.00 % N1	180	2,455	1,148	0.43	0.05	83.2
6	6	KC-46X	46LAK	ARR	9LA4	60.00 % N1	180	2,455	1,148	0.28	0.03	83.2
6	7	B-747-20A	747-A2	ARR	9RA2	6340.00 LBS	131	2,174	3,761	0.15	0.00	82.7
6	8	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	2,069	2,931	0.38	0.00	82.4
6	9	KC-135R	135D	DEP	1LD1	89.60 % NF	250	2,398	3,818	0.51	0.02	81.7
6	10	SK70 (UH-60A) BLACKH	HELC-AB	ARR	9RA2	150.00 KNOTS	150	1,680	3,683	0.37	0.01	81.6
7	1	F-16C	F16C-CA	PAT	1RC1	92.00 % NC	250	2,528	3,331	0.16	0.00	101.0
7	2	F-16C	F16C-DJ	DEP	1LD1	90.00 % NC	325	1,992	5,488	0.51	0.02	92.0
7	3	B-747-20A	747-D1	DEP	1LD1	23954.00 LBS	181	3,182	5,748	0.07	0.00	83.8
7	4	KC-46X	46RDM	DEP	1RD4	92.00 % N1	200	3,814	2,603	0.56	0.00	83.7
7	5	KC-135R	135C1	PAT	1RC1	84.70 % NF	180	2,869	3,300	0.33	0.00	83.2
7	6	T-38C	T38C-DR	DEP	1LD1	95.00 % RPM	250	3,674	5,943	0.51	0.02	81.9
7	7	KC-46X	46RCC	PAT	1RC4	85.00 % N1	190	2,959	2,764	2.59	0.29	81.9
7	8	F-16C	F16C-CB	PAT	9LC1	83.00 % NC	180	1,774	4,642	0.38	0.00	81.8
7	9	KC-46X	46RCD	PAT	1RC3	85.00 % N1	180	2,114	3,079	2.59	0.29	81.7
7	10	KC-46X	46RCA	PAT	1RC1	85.00 % N1	190	2,953	3,332	6.91	0.77	79.7
8	1	F-16C	F16C-DK	DEP	9RD4	90.00 % NC	325	2,629	1,884	1.19	0.04	102.4
8	2	F-16C	F16C-CB	PAT	9LC1	92.00 % NC	250	2,456	3,552	0.38	0.00	97.8
8	3	F-16C	F16C-CA	PAT	1RC1	83.00 % NC	180	2,016	877	0.16	0.00	92.3
8	4	B-747-20A	747-A1	ARR	1LA3	6340.00 LBS	131	2,114	1,553	0.07	0.00	91.0
8	5	KC-135R	135C1	PAT	1RC1	65.00 % NF	150	2,044	900	0.33	0.00	90.6
8	6	B-747-20A	747-D2	DEP	9RD4	23954.00 LBS	181	3,403	2,491	0.15	0.00	89.5
8	7	SK70 (UH-60A) BLACKH	HELA-AA	ARR	1LA3	150.00 KNOTS	150	1,679	1,372	0.16	0.01	89.4
8	8	KC-46X	46RCG	PAT	9RC2	60.00 % N1	150	1,725	659	0.17	0.02	89.1
8	9	KC-135R	135B	DEP	9RD4	89.60 % NF	200	2,371	1,702	1.19	0.04	88.6
8	10	KC-46X	46RDE	DEP	9LD2	92.00 % N1	185	2,894	1,685	0.85	0.01	87.6

**Key:** ARR = Arrival; DEP = Departure; PAT = Closed Pattern.

Power Units: LBS = pounds of thrust; N1 = engine speed at Location No. 1; NC = core engine speed; NF = engine fan revolutions per minute; RPM = revolutions per minute.

**Source:** NOISEMAP Version 7.2.

# APPENDIX D

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## AIR QUALITY BACKGROUND INFORMATION AND EMISSION CALCULATIONS

This Appendix is contained on the CD-ROM on the back cover of this document.





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## **APPENDIX D AIR QUALITY BACKGROUND INFORMATION AND EMISSION CALCULATIONS**

This appendix includes air quality background information for each of the four bases under consideration for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) missions. This background information includes the regional climate information, along with the spreadsheets that were used to complete the air quality analysis contained in Volume I, Chapter 4 (see Sections 4.1.2, 4.2.2, 4.3.2, and 4.4.2).

### **D.1 ALTUS AIR FORCE BASE REGIONAL CLIMATE**

Altus, Oklahoma, has a continental climate, characterized by pronounced variations in daily and seasonal temperatures and seasonal and annual precipitation. Meteorological data collected at Altus, Oklahoma, are used to describe the climate of the Altus Air Force Base (AFB) project area (OCS 2013a, 2013b).

**Temperature.** Jackson County is known for high temperatures in the summer months and cool conditions during the winter. The average high and low temperatures during the summer months at Altus AFB range from about 98 degrees Fahrenheit (°F) to 66 °F. The average high and low temperatures during the winter months range from 53 °F to 26 °F (OCS 2013a).

**Precipitation.** Average annual precipitation for Altus AFB is 28.8 inches. Precipitation is greatest during the warmer months of the year, and the peak monthly average of 4.8 inches occurs in May. Precipitation is at a minimum during the winter, as the lowest monthly average of 1.0 inch occurs in January. Snow is not uncommon during winter, but the average annual snowfall is only 3.0 inches (OCS 2013a).

**Prevailing Winds.** Altus AFB experiences fairly breezy conditions, as the average wind speed for each month of the year is at least 8.5 miles per hour and the annual average wind speed is 10.5 miles per hour. Spring is generally the windiest season, as the peak average monthly winds of 12.9 miles per hour occur in April. The wind prevails from the southeast direction for most of the year, but shifts to the northwest to north-northeast during the winter months (OCS 2013b).

## D.1.1 OPERATIONS EMISSION CALCULATIONS FOR THE KC-46A PROJECT SCENARIOS AT ALTUS AFB

**Table D.1-1. Engine Emission Factors by Throttle Setting – KC-135, C-17, and KC-46A Aircraft**

Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	2.10	30.70	4.00	1.06	0.06	0.06	3,216	0.09	0.10	3,249
Approach	2,463	0.09	4.20	8.20	1.06	0.06	0.06	3,216	0.09	0.10	3,249
Climbout	6,486	0.06	0.09	16.00	1.06	0.05	0.05	3,216	0.09	0.10	3,249
Take-off	7,801	0.05	0.09	18.50	1.06	0.07	0.07	3,216	0.09	0.10	3,249
F117-PW-100 <sup>c</sup>											
Idle	978	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Approach	4,645	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Intermediate	10,408	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Military	14,111	–	–	–	–	–	–	3,216	0.09	0.10	3,249
P&W 4062 <sup>d</sup>											
Idle	1,663	12.49	42.61	3.78	1.06	0.11	0.10	3,216	0.09	0.10	3,249
Approach	5,702	0.10	1.93	12.17	1.06	0.05	0.04	3,216	0.09	0.10	3,249
Climbout	16,870	0.08	0.50	25.98	1.06	0.07	0.06	3,216	0.09	0.10	3,249
Take-off	21,622	0.09	0.61	34.36	1.06	0.08	0.07	3,216	0.09	0.10	3,249
55%	10,778	0.09	1.28	18.45	1.06	0.06	0.05	3,216	0.09	0.10	3,249
60%	11,794	0.09	1.15	19.70	1.06	0.06	0.05	3,216	0.09	0.10	3,249
Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	–	–	0.0019	–	–	–	0.0023	0.0009	–	–
Approach	2,463	–	–	0.0032	–	–	0.0005	0.0019	0.0009	–	–
Climbout	6,486	–	–	0.0004	–	–	0.0004	0.0018	0.0008	–	–
Take-off	7,801	–	–	0.0011	–	–	–	0.0012	0.0003	–	–
F117-PW-100 <sup>c</sup>											
Idle	978	0.012	–	0.0225	–	–	–	0.0012	–	0.0007	0.0022
Approach	4,645	–	–	0.0009	–	–	–	0.0012	0.0004	0.0008	0.0016
Intermediate	10,408	–	–	0.0006	–	0.0004	–	0.0006	–	0.0002	0.0006
Military	14,111	–	–	0.0006	–	0.0004	–	0.0006	–	0.0002	0.0006
P&W 4062 <sup>d</sup>											
Idle	1,663	0.538	0.309	0.212	0.213	–	–	–	–	–	–
Approach	5,702	0.004	0.003	0.002	0.002	–	–	–	–	–	–
Climbout	16,870	0.003	0.002	0.001	0.001	–	–	–	–	–	–
Take-off	21,622	0.004	0.002	0.002	0.002	–	–	–	–	–	–
55%	10,778	0.004	0.002	0.002	0.002	–	–	–	–	–	–
60%	11,794	0.004	0.002	0.002	0.002	–	–	–	–	–	–
Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		2,4- Dinitro- phenol	Di(2- Ethylhexyl) Phthalate (DEHP)	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	Methyl tert- Butyl Ether (MTBE)	Naphth- alene	Phenol
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	–	0.0055	0.0007	0.0951	–	–	0.0675	–	0.0029	–
Approach	2,463	–	0.0015	0.0006	0.0150	–	–	0.0446	–	–	–
Climbout	6,486	–	0.0045	–	0.0056	–	–	0.0506	–	–	–
Take-off	7,801	–	0.0020	–	0.0070	–	–	0.0020	–	–	–
F117-PW-100 <sup>c</sup>											
Idle	978	0.0074	0.0030	0.0028	0.2360	–	–	0.0008	–	0.0024	0.0038
Approach	4,645	0.0056	0.0019	–	0.0165	–	–	–	–	–	–
Intermediate	10,408	0.0036	0.0017	–	0.0095	–	–	0.0063	–	–	–
Military	14,111	0.0036	0.0017	–	0.0095	–	–	0.0063	–	–	–
P&W 4062 <sup>d</sup>											
Idle	1,663	–	–	0.022	1.551	–	0.227	–	–	0.068	0.091
Approach	5,702	–	–	0.000	0.013	–	0.002	–	–	0.001	0.001
Climbout	16,870	–	–	0.000	0.010	–	0.001	–	–	0.000	0.001
Take-off	21,622	–	–	0.000	0.011	–	0.002	–	–	0.001	0.001
55%	10,778	–	–	0.000	0.012	–	0.002	–	–	0.001	0.001
60%	11,794	–	–	0.000	0.011	–	0.002	–	–	0.000	0.001

**Table D.1-1. Engine Emission Factors by Throttle Setting – KC-135, C-17, and KC-46A Aircraft (Continued)**

Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp-Xylene	o-Xylene
CFM56-2B-1 <sup>b</sup>		NR only	NR only								
Idle	1,014	—	—	0.0015	—	0.0019	0.0090	0.0008	0.0049	0.0017	—
Approach	2,463	—	—	—	—	0.0032	0.0062	0.0008	0.0038	0.0016	—
Climbout	6,486	—	—	—	—	0.0004	0.0014	—	0.0025	0.0005	—
Take-off	7,801	—	—	—	—	0.0011	0.0011	0.0003	0.0024	0.0003	—
F117-PW-100 <sup>c</sup>											
Idle	978	—	—	0.0016	0.0033	—	0.0067	—	—	0.0023	0.0010
Approach	4,645	—	—	—	0.0019	—	0.0014	0.0004	—	0.0006	—
Intermediate	10,408	—	—	—	0.0010	—	0.0011	—	—	0.0005	—
Military	14,111	—	—	—	0.0010	—	0.0011	—	—	0.0005	—
P&W 4062 <sup>d</sup>											
Idle	1,663	—	—	0.039	—	—	0.081	—	—	0.036	0.021
Approach	5,702	—	—	0.000	—	—	0.001	—	—	0.000	0.000
Climbout	16,870	—	—	0.000	—	—	0.001	—	—	0.000	0.000
Take-off	21,622	—	—	0.000	—	—	0.001	—	—	0.000	0.000
55%	10,778	—	—	0.000	—	—	0.001	—	—	0.000	0.000
60%	11,794	—	—	0.000	—	—	0.001	—	—	0.000	0.000

<sup>a</sup> Data are for 1 engine. The KC-135/KC-46A have 4/2 engines. VOC data estimated by multiplying THC source test data by 1.15 (USEPA and FAA 2009).

<sup>b</sup> Criteria pollutant data from ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – ENGINE IDENTIFICATION: CFM56-2B-1 (ICAO 1987). HAPs data from AFCEC 2013.

<sup>c</sup> From AFCEC 2013. For HAPs data, intermediate mode used to simulate military mode.

<sup>d</sup> ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – ENGINE IDENTIFICATION: PW4062 (ICAO 2013). HAPs data from Boeing 2013b.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, P&W = Pratt & Whitney, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-2. Land and Take-off/Touch and Go Times in Modes and Fuel Usages – KC-135 and KC-46A Aircraft**

Aircraft/Mode (Engine Throttle Setting)	Land and Take-Off			Touch and Go	
	Time in Mode (TIM)		Fuel Usage (Pounds) <sup>a</sup>	TIM (Hours)	Fuel Usage (Pounds) <sup>a</sup>
	(Minutes)	(Hours)			
KC-135 <sup>b</sup>					
Taxi Out (Idle)	32.8	0.55	2,217	–	–
Take-off (Military)	0.7	0.01	364	0.01	364
Climbout (Intermediate)	1.6	0.03	692	0.03	692
Approach	5.2	0.09	854	0.09	854
Taxi In (Idle)	14.9	0.25	1,007		
Totals	55.2	0.92	5,134	0.13	1,910
KC-46A <sup>b</sup>					
Taxi Out (Idle)	32.8	0.55	1,818	–	–
Take-off (Military)	0.7	0.01	505	0.01	505
Climbout (Intermediate)	1.6	0.03	900	0.03	900
Approach	5.2	0.09	988	0.09	988
Taxi In (Idle)	14.9	0.25	826	–	–
Totals	55.2	0.92	5,037	0.13	2,393

<sup>a</sup> Fuel usage per aircraft.

<sup>b</sup> TIM data from Table C-2-4 (AFCEC 2013).

**Key:** – = Source does not emit particular pollutant.

**Table D.1-3. Land and Take-off/Touch and Go Total Fuel Usages and Emissions – KC-135 and KC-46A Aircraft**

Aircraft/ Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Land and Take-Off											
KC-135	5,134	6.92	102.65	37.70	5.44	0.30	0.30	16,510	0.46	0.51	16,678
KC-46A	5,037	33.25	115.35	62.73	5.34	0.44	0.39	16,199	0.45	0.50	16,365
Touch and Go											
KC-135	1,910	0.14	3.68	24.81	2.02	0.11	0.11	6,142	0.17	0.19	6,205
KC-46A	2,393	0.22	2.67	52.74	2.54	0.15	0.13	7,695	0.21	0.24	7,773
Aircraft/ Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
Land and Take-Off											
KC-135	5,134	—	—	0.010	—	—	0.001	0.011	0.004	—	—
KC-46A	5,037	1.433	0.821	0.564	0.566	—	—	—	—	—	—
Touch and Go											
KC-135	1,910	—	—	0.003	—	—	0.001	0.003	0.001	—	—
KC-46A	2,393	0.010	0.005	0.004	0.004	—	—	—	—	—	—
Aircraft/ Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formald- ehyde	Hexane	Methanol	Methylene- Chloride	MTBE	Naphtha- lene	Phenol
Land and Take-Off											
KC-135	5,134	—	0.023	0.003	0.326	—	—	0.291	—	0.009	—
KC-46A	5,037	—	—	0.058	4.128	—	0.605	—	—	0.181	0.244
Touch and Go											
KC-135	1,910	—	0.005	0.000	0.019	—	—	0.074	—	—	—
KC-46A	2,393	—	—	0.000	0.027	—	0.004	—	—	0.001	0.002
Aircraft/ Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene
Land and Take-Off											
KC-135	5,134	—	—	0.005	—	0.010	0.036	0.003	0.022	0.007	—
KC-46A	5,037	—	—	0.104	—	—	0.215	—	—	0.095	0.056
Touch and Go											
KC-135	1,910	—	—	—	—	0.003	0.007	0.001	0.006	0.002	—
KC-46A	2,393	—	—	0.001	—	—	0.001	—	—	0.001	0.000

**Key:** – = No activity, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-4. Annual Hours of Aircraft Operation by Engine Setting for Altus AFB – Year 2008**

Aircraft	Engine Setting/Hours				
	Idle	Approach	Intermediate	Takeoff	Total
C-17	54,227	18,077	9,305	2,433	<b>84,042</b>
KC-135	21,313	17,757	10,212	2,390	<b>51,672</b>

**Source:** 2008 Mobile Source Air Emissions Inventory for Altus Air Force Base (Weston Solutions, Inc. 2008).

**Table D.1-4a. Annual Fuel Usages for Aircraft at Altus AFB –Year 2008**

Aircraft	Annual Pounds of Fuel Usage/1,000 Pounds				
	Idle	Approach	Intermediate	Takeoff	Total
C-17	53,034	83,968	96,846	34,332	<b>268,180</b>
KC-135	21,606	43,738	66,240	18,645	<b>150,229</b>
Transient	–	–	–	–	–

**Key:** – = No activity.

**Source:** 2008 Mobile Source Air Emissions Inventory for Altus Air Force Base (Weston Solutions, Inc. 2008).

**Table D.1-5. Annual Air Operations for Aircraft at Altus AFB – Year 2008**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
C-17	17,052	35,092	–	35,092	<b>87,236</b>
KC-135	6,702	44,520	–	44,520	<b>95,742</b>
Transient	195	–	–	–	<b>195</b>

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** 2008 Mobile Source Air Emissions Inventory for Altus Air Force Base (Weston Solutions, Inc. 2008).

**Table D.1-6. Annual Air Operations for Aircraft at Altus AFB – Year 2012 Existing Conditions**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
C-17	5,038	–	–	20,734	<b>25,771</b>
KC-135	1,980	–	–	26,304	<b>28,284</b>
Transient	341	–	–	334	<b>675</b>

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** EIS Table 2-5.

**Table D.1-7. Comparison of Annual Aircraft LTOs at Altus AFB – 2008 and 2012**

Scenario	Total LTOs			Fraction of 2008 LTOs <sup>a</sup>		
	C-17	KC-135	Transient	C-17	KC-135	Transient
2008	17,052	6,702	195	–	–	–
2012 Existing Conditions	5,038	1,980	341	0.30	0.30	1.75

<sup>a</sup> Applied to existing aircraft emissions to estimate future emissions from these sources.

**Key:** – = No activity, LTO = landing and takeoff.

**Table D.1-8. Year 2008 AGE Usages – Altus AFB**

Source	Fuel Type	Hp	Hrs/Yr	Load Factor	Annual Hp-Hrs	Average Hp
Manlift	JP-8	12.5	80	46	460	0.02
Universal Maint. Stand	JP-8	20.0	480	51	4,896	0.16
Jacking Manifold	JP-8	24.0	85	51	1,040	0.03
Hydraulic Test Stand	JP-8	195.0	53	51	5,271	0.17
Turbine Compressors	JP-8	200.0	170	100	34,000	0.56
Compressors	JP-8	9.5	137	60	781	0.02
Nitrogen Carts	JP-8	49.0	574	51	14,344	0.47
Air Conditioners	JP-8	7.9	6,496	28	14,369	0.85
FL-1D Light Carts	JP-8	10.2	1,244	74	9,390	0.21
Generators	JP-8	148.0	17,471	74	1,913,424	42.88
Generators	JP-8	180.0	14,000	74	1,864,800	41.79
Generators	JP-8	155.0	6,000	74	688,200	15.42
Engine	JP-8	6.0	5,164	51	15,802	0.51
Burner	JP-8	3.1	8,353	62	16,054	0.43
<b>Totals</b>	NA	NA	<b>60,307</b>	NA	<b>4,582,832</b>	<b>104</b>

**Key:** AGE = aerospace ground operations, Hp = horsepower, Hr = hour, Yr = year.

**Source:** (Weston Solutions, Inc. 2008).

**Table D.1-9. Annual Average Nonroad Emission Factors – Altus AFB KC-46A Scenarios**

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>								
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Year 2008</b>									
Diesel	1.13	3.03	14.06	0.93	1.00	1.00	568	0.094	0.007
<b>Year 2012</b>									
100-175 HP Diesel	0.54	3.92	4.58	0.13	0.61	0.56	608	0.094	0.007
<b>Year 2016 FTU or MOB 1</b>									
100-175 HP Diesel	0.38	2.75	3.11	0.12	0.46	0.42	608	0.094	0.007

<sup>a</sup> Year 2008 data from 2008 AEI (Weston Solutions, Inc. 2008) and assumes uncontrolled factors. Year 2012/2016 factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Jackson County, Oklahoma.

**Key:** AEI = Air Emissions Inventory, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HP = horsepower, MOB 1 = First Main Operating Base, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-10. Annual Air Emissions for KC-135 Aircraft Operations –  
Altus AFB Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
C-17 Aircraft Operations	87.74	794.00	2,745.60	232.00	686.68	686.68	425,379	11.77	13.23	429,726
KC-135 Aircraft Operations	13.10	525.00	713.00	121.00	176.00	176.00	221,857	6.14	6.90	224,125
Transient Aircraft Operations	0.79	2.90	1.80	0.18	0.44	0.44	330	0.01	0.01	333
On-Wing Aircraft Engine Testing - C-17	10.90	120.00	35.40	9.40	54.10	54.10	17,235	0.48	0.54	17,411
On-Wing Aircraft Engine Testing - KC-135	4.30	126.00	25.20	8.70	42.50	42.50	15,952	0.44	0.50	16,115
Aerospace Ground Support Equipment	5.70	15.30	71.00	4.70	5.04	5.00	15,753	2.61	0.19	15,865
<b>Subtotal - Year 2008</b>	<b>122.53</b>	<b>1,583.20</b>	<b>3,592.00</b>	<b>375.98</b>	<b>964.76</b>	<b>964.72</b>	<b>696,505</b>	<b>21.45</b>	<b>21.35</b>	<b>703,575</b>
<b>Year 2012</b>										
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	125,665	3.48	3.91	126,950
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	65,544	1.81	2.04	66,214
Transient Aircraft Operations	1.38	5.07	3.15	0.31	0.77	0.77	577	0.02	0.02	583
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>a</sup>	0.84	6.08	7.11	0.20	0.94	0.86	5,181	0.80	0.06	5,215
<b>Subtotal - Year 2012</b>	<b>32.01</b>	<b>400.82</b>	<b>1,032.00</b>	<b>104.80</b>	<b>256.57</b>	<b>256.49</b>	<b>196,967</b>	<b>6.11</b>	<b>6.02</b>	<b>198,962</b>
<b>FTU or MOB 1 Scenario</b>										
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	125,665	3.48	3.91	126,950
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	65,544	1.81	2.04	66,214
Transient Aircraft Operations	1.38	5.07	3.15	0.31	0.77	0.77	577	0.02	0.02	583
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>b</sup>	0.59	4.27	4.83	0.19	0.71	0.65	5,181	0.80	0.06	5,215
<b>Subtotal - FTU Scenario</b>	<b>31.76</b>	<b>399.00</b>	<b>1,029.72</b>	<b>104.79</b>	<b>256.34</b>	<b>256.27</b>	<b>196,968</b>	<b>6.11</b>	<b>6.02</b>	<b>198,962</b>
Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2008</b>										
C-17 Aircraft Operations	0.318	–	0.675	–	0.025	–	0.122	0.018	0.067	0.167
KC-135 Aircraft Operations	–	–	0.170	–	–	0.020	0.264	0.107	–	–
Transient Aircraft Operations	0.002	0.002	0.003	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	0.040	–	0.084	–	0.003	–	0.015	0.002	0.008	0.021
On-Wing Aircraft Engine Testing - KC-135	0.040	–	0.084	–	0.003	–	0.015	0.002	0.008	0.021
Aerospace Ground Support Equipment	0.014	0.002	0.060	0.009	–	–	–	–	–	–
<b>Subtotal - Year 2008</b>	<b>0.413</b>	<b>0.004</b>	<b>1.076</b>	<b>0.009</b>	<b>0.031</b>	<b>0.020</b>	<b>0.416</b>	<b>0.129</b>	<b>0.084</b>	<b>0.209</b>
<b>Year 2012</b>										
C-17 Aircraft Operations	0.094	–	0.199	–	0.007	–	0.036	0.005	0.020	0.049
KC-135 Aircraft Operations	–	–	0.050	–	–	0.006	0.078	0.032	–	–
Transient Aircraft Operations	0.003	0.004	0.006	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>a</sup>	0.002	0.000	0.009	0.001	–	–	–	–	–	–
<b>Subtotal - Year 2012</b>	<b>0.099</b>	<b>0.004</b>	<b>0.264</b>	<b>0.001</b>	<b>0.007</b>	<b>0.006</b>	<b>0.114</b>	<b>0.037</b>	<b>0.020</b>	<b>0.049</b>
<b>FTU or MOB 1 Scenario</b>										
C-17 Aircraft Operations	0.094	–	0.199	–	0.007	–	0.036	0.005	0.020	0.049
KC-135 Aircraft Operations	–	–	0.050	–	–	0.006	0.078	0.032	–	–
Transient Aircraft Operations	0.003	0.004	0.006	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>b</sup>	0.001	0.000	0.006	0.001	–	–	–	–	–	–
<b>Subtotal - FTU Scenario</b>	<b>0.099</b>	<b>0.004</b>	<b>0.262</b>	<b>0.001</b>	<b>0.007</b>	<b>0.006</b>	<b>0.114</b>	<b>0.037</b>	<b>0.020</b>	<b>0.049</b>

**Table D.1-10. Annual Air Emissions for KC-135 Aircraft Operations –  
Altus AFB Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	2,4-Dinitro-phenol	DEHP	Ethyl-benzene	Formaldehyde	Hexane	Methanol	Methyl-ene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2008</b>										
C-17 Aircraft Operations	0.665	0.270	0.075	7.574	–	–	0.430	–	0.063	0.100
KC-135 Aircraft Operations	–	0.631	0.047	6.905	–	–	7.108	–	0.199	–
Transient Aircraft Operations	–	–	0.000	0.012	–	–	–	–	0.001	–
On-Wing Aircraft Engine Testing - C-17	0.083	0.034	0.009	0.941	–	–	0.053	–	0.008	0.012
On-Wing Aircraft Engine Testing - KC-135	0.083	0.034	0.009	0.941	–	–	0.053	–	0.008	0.012
Aerospace Ground Support Equipment	–	–	0.018	0.027	0.009	–	–	0.140	0.001	–
<b>Subtotal - Year 2008</b>	<b>0.831</b>	<b>0.967</b>	<b>0.159</b>	<b>16.400</b>	<b>0.009</b>	<b>–</b>	<b>7.645</b>	<b>0.140</b>	<b>0.280</b>	<b>0.125</b>
<b>Year 2012</b>										
C-17 Aircraft Operations	0.197	0.080	0.022	2.237	–	–	0.127	–	0.019	0.030
KC-135 Aircraft Operations	–	0.186	0.014	2.040	–	–	2.100	–	0.059	–
Transient Aircraft Operations	–	–	0.001	0.021	–	–	–	–	0.002	–
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.003	0.004	0.001	–	–	0.021	0.000	–
<b>Subtotal - Year 2012</b>	<b>0.197</b>	<b>0.266</b>	<b>0.039</b>	<b>4.302</b>	<b>0.001</b>	<b>–</b>	<b>2.227</b>	<b>0.021</b>	<b>0.079</b>	<b>0.030</b>
<b>FTU or MOB 1 Scenario</b>										
C-17 Aircraft Operations	0.197	0.080	0.022	2.237	–	–	0.127	–	0.019	0.030
KC-135 Aircraft Operations	–	0.186	0.014	2.040	–	–	2.100	–	0.059	–
Transient Aircraft Operations	–	–	0.001	0.021	–	–	–	–	0.002	–
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>b</sup>	–	–	0.002	0.003	0.001	–	–	0.014	0.000	–
<b>Subtotal - FTU Scenario</b>	<b>0.197</b>	<b>0.266</b>	<b>0.038</b>	<b>4.301</b>	<b>0.001</b>	<b>–</b>	<b>2.227</b>	<b>0.014</b>	<b>0.079</b>	<b>0.030</b>

Scenario/Source	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetra-chloro-ethene	Toluene	1,1,1-Trichloro-ethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2008</b>										
C-17 Aircraft Operations	–	–	0.041	0.232	–	0.310	0.016	–	0.123	0.026
KC-135 Aircraft Operations	–	–	0.101	–	0.170	0.702	0.058	0.497	0.145	–
Transient Aircraft Operations	–	–	0.001	–	–	0.002	–	–	–	0.001
On-Wing Aircraft Engine Testing - C-17	–	–	0.005	0.029	–	0.038	0.002	–	0.015	0.003
On-Wing Aircraft Engine Testing - KC-135	–	–	0.005	0.029	–	0.038	0.002	–	0.015	0.003
Aerospace Ground Support Equipment	0.002	0.002	0.001	–	–	0.070	–	–	–	0.065
<b>Subtotal - Year 2008</b>	<b>0.002</b>	<b>0.002</b>	<b>0.154</b>	<b>0.290</b>	<b>0.170</b>	<b>1.161</b>	<b>0.078</b>	<b>0.497</b>	<b>0.298</b>	<b>0.099</b>
<b>Year 2012</b>										
C-17 Aircraft Operations	–	–	0.012	0.069	–	0.092	0.005	–	0.036	0.008
KC-135 Aircraft Operations	–	–	0.030	–	0.050	0.207	0.017	0.147	0.043	–
Transient Aircraft Operations	–	–	0.001	–	–	0.003	–	–	–	0.002
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.000	0.000	–	–	0.010	–	–	–	0.010
<b>Subtotal - Year 2012</b>	<b>0.000</b>	<b>0.000</b>	<b>0.043</b>	<b>0.069</b>	<b>0.050</b>	<b>0.312</b>	<b>0.022</b>	<b>0.147</b>	<b>0.079</b>	<b>0.019</b>
<b>FTU or MOB 1 Scenario</b>										
C-17 Aircraft Operations	–	–	0.012	0.069	–	0.092	0.005	–	0.036	0.008
KC-135 Aircraft Operations	–	–	0.030	–	0.050	0.207	0.017	0.147	0.043	–
Transient Aircraft Operations	–	–	0.001	–	–	0.003	–	–	–	0.002
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	–	–	–	–	–
Aerospace Ground Support Equipment <sup>b</sup>	0.000	0.000	0.000	–	–	0.007	–	–	–	0.007
<b>Subtotal - FTU Scenario</b>	<b>0.000</b>	<b>0.000</b>	<b>0.043</b>	<b>0.069</b>	<b>0.050</b>	<b>0.309</b>	<b>0.022</b>	<b>0.147</b>	<b>0.079</b>	<b>0.016</b>

<sup>a</sup> = 2008 AGE emissions \* 2012 total LTOs / 2008 total LTOs \* 2012/2008 Nonroad EFs.<sup>b</sup> = 2012 AGE emissions \* 2016/2012 Nonroad EFs.

**Key:** – = No activity, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EF = emission factors, FTU = Formal Training Unit, Hp = horsepower, LTO = landing and takeoff, MOB 1 = First Main Operating Base, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-11. Existing Aircraft On-Wing Engine Testing Activity Data for Altus AFB – Year 2012**

Aircraft/Test Type	Tests/ Year	# of Engines	Duration (Minutes)	Engine Setting/Annual Engine Hours			
				Idle	Approach	Intermediate	Takeoff
C-17 <sup>a</sup>							
Leak Checks	416	1	30	208.0	–	–	–
System Component Checks	520	1	5	43.3	–	–	–
Hydraulic Systems Checks	48	1	7	5.6	–	–	–
Starter Ops Checks	12	1	25	5.0	–	–	–
Engine Replacements	8	1	30	4.0	–	–	–
Engine De-Ice	24	2	17	12.0	1.6	–	–
Stall Check	26	2	31	23.5	1.7	–	1.9
Electrical Systems Check	312	2	18	145.6	–	41.6	–
Electrical Systems Check	312	4	6	114.4	–	–	–
Oil & Fuel Pressure Check	12	2	22	6.0	–	0.8	2.0
Pressurization Malfunction Checks	6	2	45	3.0	6.0	–	–
Leak Checks for ISO	52	4	30	104.0	–	–	–
Water Washes	26	4	10	17.3	–	–	–
Total Time in Modes (TIMs) - C-17				692	9	42	4
KC-135 <sup>a</sup>							
Leak Checks/Troubleshooting	250	1	15	62.4	–	–	–
Leak Checks/Troubleshooting	62	2	15	31.2	–	–	–
Leak Checks/Troubleshooting	312	4	15	312.0	–	–	–
Fuel Transfer	187	1	40	124.8	–	–	–
Fuel Transfer	21	2	40	27.7	–	–	–
Troubleshooting - High Power	104	2	40	69.3	17.3	17.3	34.7
Troubleshooting - High Power	104	4	15	104.0	–	–	–
Engine Trims	11	2	40	7.2	1.8	1.8	3.6
Engine Trims	1	4	10	0.8	–	–	–
ISO Runs	23	2	20	7.7	7.7	–	–
ISO Runs	23	4	15	23.0	–	–	–
Backline Runs	23	2	3	1.2	–	–	1.2
Backline Runs	23	4	66	99.7	1.5	–	–
Post ISO Runs	23	2	40	15.3	–	–	15.3
Post ISO Runs	23	4	15	23.0	–	–	–
Total TIMs - KC-135				909	28	19	55

<sup>a</sup> Source is SAIC 2013c. Existing C-17/KC-135 scenario based upon 17/23 aircraft.

**Key:** – = No activity, # = number, FTU = Formal Training Unit, TIM = Time in Mode.

**Table D.1-12. KC-46A Aircraft On-Wing Engine Testing Activity Data for Altus AFB – KC-46A Proposed Scenarios**

Aircraft/Test Type	Tests/ Year	# of Engines	Duration (Minutes)	Engine Setting/Annual Engine Hours			
				Idle	Approach	Intermediate	Takeoff
KC-46A - FTU <sup>a</sup>							
Leak Checks/Troubleshooting	624	2	45	936.0	–	–	–
Fuel Transfer	208	1	80	277.3	–	–	–
Troubleshooting - High Power	104	2	55	121.3	17.3	17.3	34.7
Engine Trims	12	2	50	12.0	2.0	2.0	4.0
ISO Runs	8	2	35	6.7	2.7	–	–
Total TIMs - KC-46A FTU				1,353	22	19	39
KC-46A - MOB 1 <sup>b</sup>							
Leak Checks/Troubleshooting	624	2	45	936.0	–	–	–
Fuel Transfer	208	1	80	277.3	–	–	–
Troubleshooting - High Power	104	2	55	121.3	17.3	17.3	34.7
Engine Trims	12	2	50	12.0	2.0	2.0	4.0
ISO Runs	36	2	35	30.0	12.0		
Total TIMs - KC-46A MOB 1				1,377	31	19	39

<sup>a</sup> Source is SAIC 2013c

<sup>b</sup> Source is SAIC 2013f

**Key:** – = No activity, # = number, APU = auxiliary power unit, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, TIM = Time in Mode.

**Table D.1-13. Aircraft Emission Factors by Engine Setting –  
Altus AFB KC-46A Project Alternatives**

Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (pounds/1000 pounds Fuel) <sup>a</sup>						
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>F117-PW-100 <sup>b</sup></b>								
Idle	978	0.43	22.70	3.76	1.06	10.67	10.67	3,216
Approach	4,645	0.06	0.51	15.49	1.06	5.53	5.53	3,216
Intermediate	10,408	0.05	0.32	32.72	1.06	2.31	2.31	3,216
Military	14,111	0.13	0.38	34.23	1.06	0.12	0.12	3,216
<b>CFM56-2B-1 <sup>c</sup></b>								
Idle	1,014	2.10	30.70	4.00	1.06	0.06	0.06	3,216
Approach	2,463	0.09	4.20	8.20	1.06	0.06	0.06	3,216
Intermediate	6,486	0.06	0.09	16.00	1.06	0.05	0.05	3,216
Military	7,801	0.05	0.09	18.50	1.06	0.07	0.07	3,216
<b>P&amp;W 4062 <sup>c</sup></b>								
Idle	1,663	12.49	42.61	3.78	1.06	0.11	0.10	3,216
Approach	5,702	0.10	1.93	12.17	1.06	0.05	0.04	3,216
Intermediate	16,870	0.08	0.50	25.98	1.06	0.07	0.06	3,216
Military	21,622	0.09	0.61	34.36	1.06	0.08	0.07	3,216
<b>KC-46A APU - Honeywell 331-400C <sup>d</sup></b>								
Pounds per Hour	—	0.04	0.33	6.72	0.56	0.05	0.04	1,373

<sup>a</sup> Data are for 1 engine. The C-17/KC-135/KC-46A have 4/4/2 engines.

<sup>b</sup> Data from Air Emissions Factor Guide to Air Force Mobile Sources (AFCEC 2013), except military data for the F117 engine from (AFCEE 2009).

<sup>c</sup> ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – (ICAO 2013)

<sup>d</sup> Source is Boeing 2013a.

**Key:** – = No activity, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-14. Annual Air Emissions from Existing Aircraft  
On-Wing Engine Testing Activities for Altus AFB – Year 2012**

Scenario/Engine Type	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>C-17</b>										
Idle	0.14	7.68	1.27	0.36	3.61	3.61	1,088	0.030	0.034	1,099
Approach	0.00	0.01	0.34	0.02	0.12	0.12	70	0.002	0.002	70
Intermediate	0.01	0.07	7.22	0.23	0.51	0.51	710	0.020	0.022	717
Military	0.00	0.01	0.94	0.03	0.00	0.00	89	0.002	0.003	90
<b>Subtotal C-17</b>	<b>0.16</b>	<b>7.77</b>	<b>9.77</b>	<b>0.64</b>	<b>4.24</b>	<b>4.24</b>	<b>1,956</b>	<b>0.05</b>	<b>0.06</b>	<b>1,976</b>
<b>KC-135</b>										
Idle	0.97	14.15	1.84	0.49	0.03	0.03	1,482	0.041	0.046	1,497
Approach	0.00	0.15	0.29	0.04	0.00	0.00	112	0.003	0.003	113
Intermediate	0.00	0.01	0.99	0.07	0.00	0.00	200	0.006	0.006	202
Military	0.01	0.02	3.95	0.23	0.01	0.01	687	0.019	0.021	694
<b>Subtotal KC-135</b>	<b>0.99</b>	<b>14.32</b>	<b>7.07</b>	<b>0.82</b>	<b>0.05</b>	<b>0.05</b>	<b>2,481</b>	<b>0.07</b>	<b>0.08</b>	<b>2,506</b>
<b>Total Emissions - 2012</b>	<b>1.15</b>	<b>22.09</b>	<b>16.84</b>	<b>1.46</b>	<b>4.29</b>	<b>4.29</b>	<b>4,437</b>	<b>0.12</b>	<b>0.14</b>	<b>4,482</b>

**Table D.1-14. Annual Air Emissions from Existing Aircraft  
On-Wing Engine Testing Activities for Altus AFB – Year 2012 (Continued)**

Scenario/Engine Type	Annual Emissions - Tons									
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloroform	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
<b>C-17</b>										
Idle	0.004	–	0.008	–	–	–	0.000	–	0.000	0.001
Approach	–	–	0.000	–	–	–	0.000	0.000	0.000	0.000
Intermediate	–	–	0.000	–	0.000	–	0.000	–	0.000	0.000
Military	–	–	0.000	–	0.000	–	0.000	–	0.000	0.000
<b>Subtotal C-17</b>	<b>0.00</b>	<b>–</b>	<b>0.01</b>	<b>–</b>	<b>0.00</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>KC-135</b>										
Idle	–	–	0.001	–	–	–	0.001	0.000	–	–
Approach	–	–	0.000	–	–	0.000	0.000	0.000	–	–
Intermediate	–	–	0.000	–	–	0.000	0.000	0.000	–	–
Military	–	–	0.000	–	–	–	0.000	0.000	–	–
<b>Subtotal KC-135</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>–</b>	<b>–</b>
<b>Total Emissions - 2012</b>	<b>0.00</b>	<b>–</b>	<b>0.01</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
Scenario/Engine Type	Annual Emissions - Tons									
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphth- alene	Phenol
<b>C-17</b>										
Idle	0.002	0.001	0.001	0.080	–	–	0.000	–	0.001	0.001
Approach	0.000	0.000	–	0.000	–	–	–	–	–	–
Intermediate	0.001	0.000	–	0.002	–	–	0.001	–	–	–
Military	0.000	0.000	–	0.000	–	–	0.000	–	–	–
<b>Subtotal C-17</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.08</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>
<b>KC-135</b>										
Idle	–	0.003	0.000	0.044	–	–	0.031	–	0.001	–
Approach	–	0.000	0.000	0.001	–	–	0.002	–	–	–
Intermediate	–	0.000	–	0.000	–	–	0.003	–	–	–
Military	–	0.000	–	0.001	–	–	0.000	–	–	–
<b>Subtotal KC-135</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.05</b>	<b>–</b>	<b>–</b>	<b>0.04</b>	<b>–</b>	<b>0.00</b>	<b>–</b>
<b>Total Emissions - 2012</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.13</b>	<b>–</b>	<b>–</b>	<b>0.04</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>
Scenario/Engine Type	Annual Emissions - Tons									
	POM	Propio- naldehyde	Styrene	1,1,2,2- Tetrachlor- oethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene
<b>C-17</b>										
Idle	–	–	0.001	0.001	–	0.002	–	–	0.001	0.000
Approach	–	–	–	0.000	–	0.000	0.000	–	0.000	–
Intermediate	–	–	–	0.000	–	0.000	–	–	0.000	–
Military	–	–	–	0.000	–	0.000	–	–	0.000	–
<b>Subtotal C-17</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>
<b>KC-135</b>										
Idle	–	–	0.001	–	0.001	0.004	0.000	0.002	0.001	–
Approach	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–
Intermediate	–	–	–	–	0.000	0.000	–	0.000	0.000	–
Military	–	–	–	–	0.000	0.000	0.000	0.001	0.000	–
<b>Subtotal KC-135</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>–</b>
<b>Total Emissions - 2012</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

**Key:** – = No activity, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, CH<sub>4</sub> = methane, hr = hour, ICAO = International Civil Aviation Organization, lb = pound, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-15. Annual Air Emissions from Aircraft On-Wing Engine Testing Activities for Altus AFB – KC-46A Proposed Scenarios**

Scenario/Engine Type	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>KC-46A - FTU</b>										
Idle	14.06	47.95	4.25	1.19	0.12	0.11	3,619	0.10	0.11	3,656
Approach	0.01	0.12	0.76	0.07	0.00	0.00	202	0.01	0.01	204
Intermediate	0.01	0.08	4.24	0.17	0.01	0.01	524	0.01	0.02	530
Military	0.04	0.25	14.36	0.44	0.03	0.03	1,344	0.04	0.04	1,358
APU	0.03	0.24	4.82	0.40	0.03	0.03	984	0.03	0.03	994
<b>Subtotal KC-46A FTU</b>	<b>14.14</b>	<b>48.41</b>	<b>23.62</b>	<b>1.88</b>	<b>0.17</b>	<b>0.15</b>	<b>5,690</b>	<b>0.16</b>	<b>0.18</b>	<b>5,748</b>
<b>KC-46A - MOB 1</b>										
Idle	14.30	48.78	4.33	1.21	0.13	0.11	3,682	0.10	0.11	3,719
Approach	0.01	0.17	1.09	0.09	0.00	0.00	287	0.01	0.01	290
Intermediate	0.01	0.08	4.24	0.17	0.01	0.01	524	0.01	0.02	530
Military	0.04	0.25	14.36	0.44	0.03	0.03	1,344	0.04	0.04	1,358
APU	0.03	0.24	4.93	0.41	0.03	0.03	1,006	0.03	0.03	1,017
<b>Subtotal KC-46A MOB 1</b>	<b>14.39</b>	<b>49.54</b>	<b>28.94</b>	<b>2.34</b>	<b>0.21</b>	<b>0.19</b>	<b>6,844</b>	<b>0.19</b>	<b>0.21</b>	<b>6,914</b>
Scenario/Engine Type	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>KC-46A - FTU</b>										
Idle	0.606	0.347	0.238	0.239	–	–	–	–	–	–
Approach	0.000	0.000	0.000	0.000	–	–	–	–	–	–
Intermediate	0.001	0.000	0.000	0.000	–	–	–	–	–	–
Military	0.002	0.001	0.001	0.001	–	–	–	–	–	–
APU	0.001	0.001	0.001	0.001	–	–	–	–	–	–
<b>Subtotal KC-46A FTU</b>	<b>0.61</b>	<b>0.35</b>	<b>0.24</b>	<b>0.24</b>	–	–	–	–	–	–
<b>KC-46A - MOB 1</b>										
Idle	0.616	0.353	0.243	0.243	–	–	–	–	–	–
Approach	0.000	0.000	0.000	0.000	–	–	–	–	–	–
Intermediate	0.001	0.000	0.000	0.000	–	–	–	–	–	–
Military	0.002	0.001	0.001	0.001	–	–	–	–	–	–
APU	0.001	0.001	0.001	0.001	–	–	–	–	–	–
<b>Subtotal KC-46A MOB 1</b>	<b>0.620</b>	<b>0.356</b>	<b>0.244</b>	<b>0.245</b>	–	–	–	–	–	–

**Table D.1-15. Annual Air Emissions from Aircraft On-Wing Engine Testing Activities for Altus AFB – KC-46A Proposed Scenarios (Continued)**

Scenario/Engine Type	Annual Emissions - Tons									
	2,4-Dinitro-phenol	DEHP	Ethyl-benzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>KC-46A - FTU</b>										
	NR Only					NR Only				
Idle	–	–	0.025	1.745	–	0.256	–	–	0.077	0.103
Approach	–	–	0.000	0.001	–	0.000	–	–	0.000	0.000
Intermediate	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000
Military	–	–	0.000	0.005	–	0.001	–	–	0.000	0.000
APU	–	–	0.000	0.004	–	0.001	–	–	0.000	0.000
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.02</b>	<b>1.75</b>	–	<b>0.26</b>	–	–	<b>0.08</b>	<b>0.10</b>
<b>KC-46A - MOB 1</b>										
Idle	–	–	0.025	1.775	–	0.260	–	–	0.078	0.105
Approach	–	–	0.000	0.001	–	0.000	–	–	0.000	0.000
Intermediate	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000
Military	–	–	0.000	0.005	–	0.001	–	–	0.000	0.000
APU	–	–	0.000	0.004	–	0.001	–	–	0.000	0.000
<b>Subtotal KC-46A MOB 1</b>	–	–	<b>0.025</b>	<b>1.787</b>	–	<b>0.262</b>	–	–	<b>0.079</b>	<b>0.105</b>
Scenario/Engine Type	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>KC-46A - FTU</b>										
	NR Only		NR Only							
Idle	–	–	0.044	–	–	0.091	–	–	0.040	0.024
Approach	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Intermediate	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Military	–	–	0.000	–	–	0.000	–	–	0.000	0.000
APU	–	–	0.000	–	–	0.000	–	–	0.000	0.000
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.04</b>	–	–	<b>0.09</b>	–	–	<b>0.04</b>	<b>0.02</b>
<b>KC-46A - MOB 1</b>										
Idle	–	–	0.045	–	–	0.093	–	–	0.041	0.024
Approach	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Intermediate	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Military	–	–	0.000	–	–	0.000	–	–	0.000	0.000
APU	–	–	0.000	–	–	0.000	–	–	0.000	0.000
<b>Subtotal KC-46A MOB 1</b>	–	–	<b>0.045</b>	–	–	<b>0.093</b>	–	–	<b>0.041</b>	<b>0.024</b>

**Key:** – = No activity, APU = auxiliary power unit, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-16. KC-46A Aircraft Landings and Take-offs at Altus AFB – KC-46A Proposed Scenarios**

Scenario/Operation	Operations/ Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		Idle	Approach	Climbout	Takeoff	Idle	Approach	Climbout	Takeoff
FTU <sup>a</sup>									
LTO	1,827	47.7	5.2	1.6	0.7	1,452	158	49	21
Total TIMs - KC-46A FTU LTOs	NA	NA	NA	NA	NA	1,452	158	49	21
MOB 1 <sup>b</sup>									
LTO	2,815	47.7	5.2	1.6	0.7	2,238	244	75	33
Total TIMs - KC-46A MOB 1 LTOs	NA	NA	NA	NA	NA	2,238	244	75	33

<sup>a</sup> EIS Table 2-5 and SAIC 2013k.

<sup>b</sup> EIS Table 2-8 and SAIC 2013l.

**Key:** FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base, TIM = Time in Mode.

**Table D.1-17. KC-46A Aircraft Closed Pattern Operations at Altus AFB –  
KC-46A Proposed Scenarios**

Scenario/Operation	Operations/ Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
FTU <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	9,419	12.0	2.0	–	1.0	1,884	314	–	157
Closed Pattern - VFR	6,740	5.0	2.0	–	1.0	562	225	–	112
Closed Pattern - Tactical	2,494	8.0	2.0	2.0	1.0	333	83	83	42
Total TIMs - KC-46A FTU						2,778	622	83	311
MOB 1 <sup>b</sup>									
Closed Pattern - Radar & Initial to Overhead	6,415	12.0	2.0	–	1.0	1,283	214	–	107
Closed Pattern - VFR	4,357	5.0	2.0	–	1.0	363	145	–	73
Closed Pattern - Tactical	3,023	8.0	2.0	2.0	1.0	403	101	101	50
Total TIMs - KC-46A MOB 1						2,049	460	101	230

<sup>a</sup> EIS Table 2-5 and SAIC 2013k. Closed Pattern – Tactical ops reduced by 7.5% to reflect amount of time above 3,000 feet AGL.

<sup>b</sup> EIS Table 2-8 and SAIC 2013l. Closed Pattern – Tactical ops reduced by 7.5% to reflect amount of time above 3,000 feet AGL.

**Key:** – = No activity, % = percent, AGL = above ground level, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, ops = operations, TIM = Time in Mode, VFR = visual flight rules.

**Table D.1-18. APU Usage per LTO for the KC-46A Aircraft**

Equipment Type/Mode	Hours/Mode
<b>APU</b>	
Pre-Flight - OBIGGS + Electric + Maximum ECS	1.50
Pre-Flight - Main Engine Start + Electric	0.03
Post-Flight - Electric + Minimum ECS	0.58
<b>Total Hours per LTO</b>	<b>2.12</b>

**Key:** APU = auxiliary power unit, ECS = Environmental Control System, LTO = landing and takeoff, OBIGGS = On-Board Inert Gas Generation System

**Source:** Boeing 2013a.

**Table D.1-19. Emissions Factors by Engine Setting for the KC-46A Aircraft**

Engine/Setting	Fuel Flow (lbs/hr)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>						
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
P&W 4062 <sup>b</sup>								
Idle (7%)	1,663	12.49	42.61	3.78	1.06	0.11	0.10	3,216
Approach (30%)	5,702	0.10	1.93	12.17	1.06	0.05	0.04	3,216
Climbout (85%)	16,870	0.08	0.50	25.98	1.06	0.07	0.06	3,216
Take-off (100%)	21,622	0.09	0.61	34.36	1.06	0.08	0.07	3,216
APU - Honeywell 331-400C <sup>c</sup>								
Pounds per Hour	–	0.04	0.33	6.72	0.56	0.05	0.04	1,373

<sup>a</sup> Data are for 1 engine – the KC-46A has 2 engines.

<sup>b</sup> ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – (ICAO 2013).

<sup>c</sup> Source is Boeing 2013a.

**Key:** % = percent, APU = auxiliary power unit, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, hr = hour, ICAO = International Civil Aviation Organization, lbs = pounds, NO<sub>x</sub> = nitrogen oxides, P&W = Pratt & Whitney, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-20. Interpolated Emissions Factors by Engine Setting  
for the KC-46A Aircraft – Closed Patterns**

Engine/N Setting from Noise	Fuel Flow (lbs/hr)	Emission Factors (Pounds/1000 Pounds Fuel)						
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
P&W 4062								
55%	10,778	0.09	1.28	18.45	1.06	0.06	0.05	3,216
60%	11,794	0.09	1.15	19.70	1.06	0.06	0.05	3,216

**Key:** % = percent, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, hr = hour, lbs = pounds, NO<sub>x</sub> = nitrogen oxides, P&W = Pratt & Whitney, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-21. Annual Air Emissions from KC-46A Operations at Altus AFB –  
Year 2016**

Scenario/Operation/Engine Setting	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>FTU/LTOs</b>										
Idle	30.16	102.91	9.13	2.56	0.27	0.24	7,767	0.21	0.24	7,846
Approach	0.09	1.74	10.99	0.96	0.05	0.04	2,903	0.08	0.09	2,933
Climbout	0.07	0.41	21.35	0.87	0.06	0.05	2,642	0.07	0.08	2,669
Take-off	0.04	0.28	15.83	0.49	0.04	0.03	1,482	0.04	0.05	1,497
APU	0.08	0.65	12.99	1.09	0.09	0.08	2,654	0.07	0.08	2,681
<b>Subtotal FTU LTOs</b>	<b>30.45</b>	<b>105.99</b>	<b>70.28</b>	<b>5.96</b>	<b>0.50</b>	<b>0.44</b>	<b>17,448</b>	<b>0.48</b>	<b>0.54</b>	<b>17,626</b>
<b>FTU/Closed Patterns</b>										
55%	2.79	38.33	552.35	31.74	1.77	1.47	96,293	2.66	2.99	97,278
60%	0.67	8.43	144.48	7.77	0.45	0.37	23,582	0.65	0.73	23,823
Climbout	0.11	0.70	36.43	1.49	0.10	0.08	4,510	0.12	0.14	4,556
Take-off	0.62	4.10	230.96	7.13	0.54	0.47	21,617	0.60	0.67	21,838
<b>Subtotal FTU Closed Patterns</b>	<b>4.18</b>	<b>51.56</b>	<b>964.22</b>	<b>48.12</b>	<b>2.85</b>	<b>2.40</b>	<b>146,003</b>	<b>4.04</b>	<b>4.54</b>	<b>147,495</b>
<b>Total FTU Operations</b>	<b>34.63</b>	<b>157.55</b>	<b>1,034.50</b>	<b>54.09</b>	<b>3.35</b>	<b>2.84</b>	<b>163,451</b>	<b>4.52</b>	<b>5.08</b>	<b>165,121</b>
<b>MOB 1/LTOs</b>										
Idle	46.49	158.60	14.07	3.95	0.41	0.37	11,970	0.33	0.37	12,093
Approach	0.14	2.69	16.93	1.47	0.07	0.06	4,474	0.12	0.14	4,520
Climbout	0.10	0.63	32.90	1.34	0.09	0.08	4,073	0.11	0.13	4,114
Take-off	0.07	0.43	24.40	0.75	0.06	0.05	2,284	0.06	0.07	2,307
APU	0.13	1.00	20.02	1.67	0.14	0.13	4,090	0.11	0.13	4,132
<b>Subtotal MOB 1 LTOs</b>	<b>46.93</b>	<b>163.35</b>	<b>108.32</b>	<b>9.19</b>	<b>0.76</b>	<b>0.68</b>	<b>26,890</b>	<b>1</b>	<b>1</b>	<b>27,165</b>
<b>MOB 1/Closed Patterns</b>										
55%	2.06	28.27	407.43	23.41	1.31	1.08	71,029	1.97	2.21	71,755
60%	0.49	6.24	106.85	5.75	0.33	0.28	17,440	0.48	0.54	17,619
Climbout	0.14	0.85	44.16	1.80	0.12	0.10	5,467	0.15	0.17	5,522
Take-off	0.46	3.03	170.81	5.27	0.40	0.35	15,987	0.44	0.50	16,150
<b>Subtotal MOB 1 Closed Patterns</b>	<b>3.14</b>	<b>38.39</b>	<b>729.24</b>	<b>36.23</b>	<b>2.15</b>	<b>1.81</b>	<b>109,923</b>	<b>3.04</b>	<b>3.42</b>	<b>111,046</b>
<b>Total MOB 1 Operations</b>	<b>50.07</b>	<b>201.73</b>	<b>837.56</b>	<b>45.42</b>	<b>2.92</b>	<b>2.49</b>	<b>136,813</b>	<b>3.79</b>	<b>4.25</b>	<b>138,212</b>
Scenario/Operation/Engine Setting	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>FTU/LTOs</b>										
Idle	1.300	0.745	0.512	0.513	–	–	–	–	–	–
Approach	0.004	0.002	0.002	0.002	–	–	–	–	–	–
Climbout	0.003	0.002	0.001	0.001	–	–	–	–	–	–
Take-off	0.002	0.001	0.001	0.001	–	–	–	–	–	–
APU	0.004	0.002	0.001	0.001	–	–	–	–	–	–
<b>Subtotal FTU LTOs</b>	<b>1.31</b>	<b>0.75</b>	<b>0.52</b>	<b>0.52</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>FTU/Closed Patterns</b>										
55%	0.120	0.069	0.047	0.047	–	–	–	–	–	–
60%	0.029	0.016	0.011	0.011	–	–	–	–	–	–
Climbout	0.005	0.003	0.002	0.002	–	–	–	–	–	–
Take-off	0.027	0.015	0.010	0.011	–	–	–	–	–	–
<b>Subtotal FTU Closed Patterns</b>	<b>0.180</b>	<b>0.103</b>	<b>0.071</b>	<b>0.071</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total FTU Operations</b>	<b>1.49</b>	<b>0.86</b>	<b>0.59</b>	<b>0.59</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>MOB 1/LTOs</b>										
Idle	2.003	1.148	0.788	0.791	–	–	–	–	–	–
Approach	0.006	0.004	0.002	0.002	–	–	–	–	–	–
Climbout	0.004	0.003	0.002	0.002	–	–	–	–	–	–
Take-off	0.003	0.002	0.001	0.001	–	–	–	–	–	–
APU	0.006	0.003	0.002	0.002	–	–	–	–	–	–
<b>Subtotal MOB 1 LTOs</b>	<b>2.02</b>	<b>1.16</b>	<b>0.80</b>	<b>0.80</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>MOB 1/Closed Patterns</b>										
55%	0.089	0.051	0.035	0.035	–	–	–	–	–	–
60%	0.021	0.012	0.008	0.008	–	–	–	–	–	–
Climbout	0.006	0.003	0.002	0.002	–	–	–	–	–	–
Take-off	0.020	0.011	0.008	0.008	–	–	–	–	–	–
<b>Subtotal MOB 1 Closed Patterns</b>	<b>0.135</b>	<b>0.078</b>	<b>0.053</b>	<b>0.053</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total MOB 1 Operations</b>	<b>2.16</b>	<b>1.24</b>	<b>0.85</b>	<b>0.85</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.1-21. Annual Air Emissions from KC-46A Operations at Altus AFB – Year 2016 (Continued)**

Scenario/Operation/Engine Setting	Annual Emissions - Tons									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>FTU/LTOs</b>										
Idle	–	–	0.053	3.745	–	0.549	–	–	0.165	0.221
Approach	–	–	0.000	0.012	–	0.002	–	–	0.001	0.001
Climbout	–	–	0.000	0.008	–	0.001	–	–	0.000	0.000
Take-off	–	–	0.000	0.005	–	0.001	–	–	0.000	0.000
APU	–	–	0.000	0.010	–	0.002	–	–	0.000	0.001
<b>Subtotal FTU LTOs</b>	–	–	<b>0.05</b>	<b>3.78</b>	–	<b>0.55</b>	–	–	<b>0.17</b>	<b>0.22</b>
<b>FTU/Closed Patterns</b>										
55%	–	–	0.005	0.346	–	0.051	–	–	0.015	0.020
60%	–	–	0.001	0.083	–	0.012	–	–	0.004	0.005
Climbout	–	–	0.000	0.014	–	0.002	–	–	0.001	0.001
Take-off	–	–	0.001	0.077	–	0.011	–	–	0.003	0.005
<b>Subtotal FTU Closed Patterns</b>	–	–	<b>0.007</b>	<b>0.519</b>	–	<b>0.076</b>	–	–	<b>0.023</b>	<b>0.031</b>
<b>Total FTU Operations</b>	–	–	<b>0.06</b>	<b>4.30</b>	–	<b>0.63</b>	–	–	<b>0.19</b>	<b>0.25</b>
<b>MOB 1/LTOs</b>										
Idle	–	–	0.082	5.771	–	0.846	–	–	0.254	0.341
Approach	–	–	0.000	0.018	–	0.003	–	–	0.001	0.001
Climbout	–	–	0.000	0.013	–	0.002	–	–	0.001	0.001
Take-off	–	–	0.000	0.008	–	0.001	–	–	0.000	0.000
APU	–	–	0.000	0.016	–	0.002	–	–	0.001	0.001
<b>Subtotal MOB 1 LTOs</b>	–	–	<b>0.08</b>	<b>5.83</b>	–	<b>0.85</b>	–	–	<b>0.26</b>	<b>0.34</b>
<b>MOB 1/Closed Patterns</b>										
55%	–	–	0.004	0.255	–	0.037	–	–	0.011	0.015
60%	–	–	0.001	0.061	–	0.009	–	–	0.003	0.004
Climbout	–	–	0.000	0.017	–	0.002	–	–	0.001	0.001
Take-off	–	–	0.001	0.057	–	0.008	–	–	0.002	0.003
<b>Subtotal MOB 1 Closed Patterns</b>	–	–	<b>0.006</b>	<b>0.390</b>	–	<b>0.057</b>	–	–	<b>0.017</b>	<b>0.023</b>
<b>Total MOB 1 Operations</b>	–	–	<b>0.09</b>	<b>6.22</b>	–	<b>0.91</b>	–	–	<b>0.27</b>	<b>0.37</b>
Scenario/Operation/Engine Setting	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>FTU/LTOs</b>										
Idle	–	–	0.094	–	–	0.195	–	–	0.086	0.051
Approach	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Climbout	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000
APU	–	–	0.000	–	–	0.001	–	–	0.000	0.000
<b>Subtotal FTU LTOs</b>	–	–	<b>0.10</b>	–	–	<b>0.20</b>	–	–	<b>0.09</b>	<b>0.05</b>
<b>FTU/Closed Patterns</b>										
55%	–	–	0.009	–	–	0.018	–	–	0.008	0.005
60%	–	–	0.002	–	–	0.004	–	–	0.002	0.001
Climbout	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Take-off	–	–	0.002	–	–	0.004	–	–	0.002	0.001
<b>Subtotal FTU Closed Patterns</b>	–	–	<b>0.013</b>	–	–	<b>0.027</b>	–	–	<b>0.012</b>	<b>0.007</b>
<b>Total FTU Operations</b>	–	–	<b>0.11</b>	–	–	<b>0.22</b>	–	–	<b>0.10</b>	<b>0.06</b>
<b>MOB 1/LTOs</b>										
Idle	–	–	0.145	–	–	0.301	–	–	0.132	0.078
Approach	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Climbout	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000
APU	–	–	0.000	–	–	0.001	–	–	0.000	0.000
<b>Subtotal MOB 1 LTOs</b>	–	–	<b>0.15</b>	–	–	<b>0.30</b>	–	–	<b>0.13</b>	<b>0.08</b>
<b>MOB 1/Closed Patterns</b>										
55%	–	–	0.006	–	–	0.013	–	–	0.006	0.003
60%	–	–	0.002	–	–	0.003	–	–	0.001	0.001
Climbout	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Take-off	–	–	0.001	–	–	0.003	–	–	0.001	0.001
<b>Subtotal MOB 1 Closed Patterns</b>	–	–	<b>0.010</b>	–	–	<b>0.020</b>	–	–	<b>0.009</b>	<b>0.005</b>
<b>Total MOB 1 Operations</b>	–	–	<b>0.16</b>	–	–	<b>0.32</b>	–	–	<b>0.14</b>	<b>0.08</b>

**Key:** – = Source does not emit particular pollutant, % = percent, APU = auxiliary power unit, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-22. Annual Aircraft LTOs at Altus AFB – KC-46A Project Scenarios**

Aircraft	Annual LTOs			
	2008	2012	FTU	MOB 1
C-17	17,052	5,038	5,038	5,038
KC-135	6,702	1,980	1,980	1,980
Transient	195	341	341	341
KC-46A			1,827	2,815
<b>Total LTOs</b>	<b>25,957</b>	<b>9,371</b>	<b>9,185</b>	<b>10,174</b>

**Key:** FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base.

**Table D.1-23. Annual Nonroad Emission Factors – Altus AFB KC-46A Scenarios**

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>						
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>Year 2008</b>							
Diesel	1.13	3.03	14.06	0.93	1.00	1.00	562
<b>Year 2012</b>							
100-175 HP Diesel	0.54	3.92	4.58	0.13	0.61	0.56	608
<b>Year 2016 FTU or MOB 1</b>							
100-175 HP Diesel	0.38	2.75	3.11	0.12	0.46	0.42	608

<sup>a</sup> Year 2008 data from 2008 AEI (Weston Solutions, Inc. 2008), which assume uncontrolled factors. Year 2012/2016 factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Jackson County, OK.

**Key:** CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HP = horsepower, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, OK = Oklahoma, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-24. Annual Air Emissions for AGE Usages – Altus AFB KC-46A Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
Aerospace Ground Support Equipment	5.70	15.30	71.00	4.70	5.04	5.00	15,753	2.61	0.19	15,865
<b>Subtotal - Year 2008</b>	<b>5.70</b>	<b>15.30</b>	<b>71.00</b>	<b>4.70</b>	<b>5.04</b>	<b>5.00</b>	<b>15,753</b>	<b>2.61</b>	<b>0.19</b>	<b>15,865</b>
<b>Year 2016 - FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.13	0.98	1.11	0.04	0.16	0.15	1,199	0.19	0.00	1,203
<b>Subtotal - FTU Scenario</b>	<b>0.13</b>	<b>0.98</b>	<b>1.11</b>	<b>0.04</b>	<b>0.16</b>	<b>0.15</b>	<b>1,199</b>	<b>0.19</b>	<b>0.00</b>	<b>1,203</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.21	1.51	1.70	0.07	0.25	0.23	1,848	0.29	0.00	1,854
<b>Subtotal - MOB 1 Scenario</b>	<b>0.21</b>	<b>1.51</b>	<b>1.70</b>	<b>0.07</b>	<b>0.25</b>	<b>0.23</b>	<b>1,848</b>	<b>0.29</b>	<b>0.00</b>	<b>1,854</b>

Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2008</b>										
Aerospace Ground Support Equipment	0.014	0.002	0.060	0.009	–	–	–	–	–	–
<b>Subtotal - Year 2008</b>	<b>0.01</b>	<b>0.00</b>	<b>0.06</b>	<b>0.01</b>	–	–	–	–	–	–
<b>Year 2016 - FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.000	0.001	0.000	–	–	–	–	–	–
<b>Subtotal - FTU Scenario</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	–	–	–	–
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.001	0.000	0.002	0.000	–	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	–	–	–	–

Scenario/Source	Annual Emissions - Tons									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2008</b>										
Aerospace Ground Support Equipment	–	–	0.018	0.027	0.009	–	–	0.140	0.001	–
<b>Subtotal - Year 2008</b>	–	–	<b>0.02</b>	<b>0.03</b>	<b>0.01</b>	–	–	<b>0.14</b>	<b>0.00</b>	–
<b>Year 2016 - FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.000	0.001	0.000	–	–	0.003	0.000	–
<b>Subtotal - FTU Scenario</b>	–	–	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	<b>0.00</b>	<b>0.00</b>	–
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.001	0.001	0.000	–	–	0.005	0.000	–
<b>Subtotal - MOB 1 Scenario</b>	–	–	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	<b>0.01</b>	<b>0.00</b>	–

Scenario/Source	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2008</b>										
Aerospace Ground Support Equipment	0.002	0.002	0.001	–	–	0.070	–	–	–	0.065
<b>Subtotal - Year 2008</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	<b>0.07</b>	–	–	–	<b>0.07</b>
<b>Year 2016 - FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.000	0.000	–	–	0.002	–	–	–	0.002
<b>Subtotal - FTU Scenario</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	<b>0.00</b>	–	–	–	<b>0.00</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.000	0.000	–	–	0.003	–	–	–	0.002
<b>Subtotal - MOB 1 Scenario</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>	–	–	<b>0.00</b>	–	–	–	<b>0.00</b>

<sup>a</sup> 2008 AGE emissions \* 2016 KC-46A LTOs / 2008 total LTOs \* 2016/2008 Nonroad EFs.

**Key:** AGE = aerospace ground equipment, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EF = emission factors, FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-25. Annual VMT for GMVs by Vehicle Class –  
Altus AFB KC-46A Project Scenarios**

Vehicle Class	Annual VMT <sup>a</sup>			
	2008	Year 2012	Year 2016 FTU	Year 2016 MOB 1
LDGV	49,865	47,999	55,561	71,593
LDGT1	51,039	49,129	56,869	73,279
LDGT2	1,140	1,097	1,270	1,637
HDGV	5,178	4,984	5,769	7,434
LDDT	2,817	2,712	3,139	4,044
HDDV	206,933	199,190	230,571	297,103
<b>Totals</b>	<b>316,972</b>	<b>305,111</b>	<b>353,180</b>	<b>455,091</b>

<sup>a</sup> Future year estimates based on ratio of future year/2008 Altus AFB worker populations.

**Key:** AFB = Air Force Base, FTU = Formal Training Unit, GMV = government motor vehicle, HDDV = heavy duty diesel vehicle, HDGV = heavy duty gasoline vehicle, LDDT = light duty diesel truck, LDGT = light duty gasoline truck, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, VMT = vehicle miles traveled.

**Table D.1-26. Annual Worker Population at Altus AFB – KC-46A Project Scenarios**

Scenario	Total # of Workers <sup>a</sup>	Fraction of 2008	Scenario Total Workers minus 2008 Total Workers	Fraction of 2008
Year 2008	4,062	1.00	4,062	1.00
Year 2012	3,910	0.96	(152)	(0.04)
Year 2016 FTU	4,526	1.114	464	0.11
Year 2016 MOB 1	5,832	1.436	1,770	0.44

<sup>a</sup> For year 2008, # of personnel obtained from 2008 Altus AFB Economic Impacts Statement (Altus AFB Comptroller Squadron 2008) and EIS Tables 2-4 and 2-7 for all other scenarios.

**Key:** # = number, ( ) = parenthesis indicate negative numbers, AFB = Air Force Base, FTU = Formal Training Unit, MOB 1 = First Main Operating Base.

**Table D.1-27. Annual Average On-Road Vehicle Emission Factors –  
Altus AFB KC-46A Scenarios**

Scenario/ Vehicle Class	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
LDGV	0.40	6.20	0.40	0.07	0.71	0.20	368	0.001	0.0002	368
LDGT1	0.50	8.90	0.70	0.10	1.08	0.29	444	0.001	0.0002	444
LDGT2	1.20	16.90	1.20	0.10	2.58	0.66	444	0.001	0.0002	444
HDGV	1.10	13.50	3.00	0.15	5.51	1.42	444	0.001	0.0002	444
LDDT	0.90	1.80	1.40	0.16	1.59	0.48	1,246	0.001	0.001	1,246
HDDV	2.00	11.30	6.50	0.51	7.73	2.01	1,246	0.001	0.001	1,246
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.23	0.39	0.00	0.02	0.01	321	0.001	0.0001	321
LDGT1	0.17	4.97	0.99	0.01	0.03	0.01	444	0.001	0.0002	444
LDGT2	0.17	4.97	0.99	0.01	0.03	0.01	444	0.001	0.0002	444
HDGV	0.17	4.97	0.99	0.01	0.03	0.01	444	0.001	0.0002	444
LDDT	0.42	2.10	3.04	0.00	0.21	0.19	619	0.000	0.000	619
HDDV - Road 3	0.42	2.51	10.25	0.01	0.56	0.50	1,949	0.001	0.001	1,949
<b>Year 2016 FTU or MOB 1</b>										
LDGV - Road 3	0.03	1.65	0.19	0.00	0.02	0.01	302	0.001	0.0001	302
LDGT1	0.12	4.02	0.73	0.01	0.03	0.01	413	0.001	0.0002	413
LDGT2	0.12	4.02	0.73	0.01	0.03	0.01	444	0.001	0.0002	444
HDGV	0.12	4.02	0.73	0.01	0.03	0.01	444	0.001	0.0002	444
LDDT	0.25	1.31	1.91	0.00	0.13	0.12	619	0.000	0.000	619
HDDV - Road 3	0.25	1.57	6.44	0.01	0.36	0.30	1,949	0.001	0.001	1,949

<sup>a</sup> Year 2008 factors from 2008 AEI (Weston Solutions, Inc. 2008). Year 2012 and 2016 factors estimated with the use of the EPA MOVES2010b model (USEPA 2013) for Road 3 conditions and based on default parameters for Jackson County.

**Key:** AEI = Air Emissions Inventory, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, HDGV = heavy duty gasoline vehicle, LDDT = light duty diesel truck, LDGT = light duty gasoline truck, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-28. Annual Emissions from GMV Activities on Altus AFB – KC-46A Project Scenarios**

Scenario/ Vehicle Class	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>Year 2008</b>										
LDGV	0.02	0.34	0.02	0.00	0.04	0.01	20	0.00	0.00	20.25
LDGT1	0.03	0.50	0.04	0.01	0.06	0.02	25	0.00	0.00	24.95
LDGT2	0.00	0.02	0.00	0.00	0.00	0.00	1	0.00	0.00	0.56
HDGV	0.01	0.08	0.02	0.00	0.03	0.01	3	0.00	0.00	2.60
LDDT	0.00	0.01	0.00	0.00	0.00	0.00	4	0.00	0.00	3.80
HDDV	0.46	2.58	1.48	0.12	1.76	0.46	293	0.00	0.00	293.13
<b>Total</b>	<b>0.52</b>	<b>3.52</b>	<b>1.56</b>	<b>0.13</b>	<b>1.90</b>	<b>0.50</b>	<b>345.23</b>	<b>0.00</b>	<b>0.00</b>	<b>345.28</b>
<b>Year 2012</b>										
LDGV	0.00	0.12	0.02	0.00	0.00	0.00	17.00	0.00	0.00	17.00
LDGT1	0.01	0.27	0.05	0.00	0.00	0.00	24.01	0.00	0.00	24.02
LDGT2	0.00	0.01	0.00	0.00	0.00	0.00	0.54	0.00	0.00	0.54
HDGV	0.00	0.03	0.01	0.00	0.00	0.00	2.50	0.00	0.00	2.50
LDDT	0.00	0.01	0.01	0.00	0.00	0.00	1.82	0.00	0.00	1.82
HDDV	0.09	0.55	2.25	0.00	0.12	0.11	441.35	0.00	0.00	441.42
<b>Total</b>	<b>0.11</b>	<b>0.98</b>	<b>2.34</b>	<b>0.00</b>	<b>0.13</b>	<b>0.11</b>	<b>487.22</b>	<b>0.00</b>	<b>0.00</b>	<b>487.29</b>
<b>Year 2016 FTU</b>										
LDGV	0.00	0.10	0.01	0.00	0.00	0.00	18.52	0.00	0.00	18.53
LDGT1	0.01	0.25	0.05	0.00	0.00	0.00	25.89	0.00	0.00	25.90
LDGT2	0.00	0.01	0.00	0.00	0.00	0.00	0.62	0.00	0.00	0.62
HDGV	0.00	0.03	0.00	0.00	0.00	0.00	2.90	0.00	0.00	2.90
LDDT	0.00	0.00	0.01	0.00	0.00	0.00	2.10	0.00	0.00	2.10
HDDV	0.07	0.40	1.63	0.00	0.09	0.08	510.94	0.00	0.00	511.02
<b>Total</b>	<b>0.08</b>	<b>0.79</b>	<b>1.70</b>	<b>0.00</b>	<b>0.09</b>	<b>0.08</b>	<b>560.97</b>	<b>0.00</b>	<b>0.00</b>	<b>561.06</b>
<b>Year 2016 MOB 1</b>										
LDGV	0.00	0.13	0.02	0.00	0.00	0.00	23.87	0.00	0.00	23.87
LDGT1	0.01	0.32	0.06	0.00	0.00	0.00	33.36	0.00	0.00	33.37
LDGT2	0.00	0.01	0.00	0.00	0.00	0.00	0.80	0.00	0.00	0.80
HDGV	0.00	0.03	0.01	0.00	0.00	0.00	3.73	0.00	0.00	3.73
LDDT	0.00	0.01	0.01	0.00	0.00	0.00	2.71	0.00	0.00	2.71
HDDV	0.08	0.51	2.10	0.00	0.12	0.10	658.37	0.00	0.00	658.47
<b>Total</b>	<b>0.10</b>	<b>1.01</b>	<b>2.19</b>	<b>0.01</b>	<b>0.12</b>	<b>0.10</b>	<b>722.84</b>	<b>0.00</b>	<b>0.00</b>	<b>722.95</b>

**Note:** Future year emissions = 2008 emissions \* future scenario worker fraction of 2008 \* future scenario year vehicle emission factor/ 2008 vehicle emission factor.

**Key:** CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, FTU = Formal Training Unit, GMV = government motor vehicle, HDDV = heavy duty diesel vehicle, HDGV = heavy duty gasoline vehicle, LDDT = light duty diesel truck, LDGT = light duty gasoline truck, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-29. Annual On Base On-Road POV Mileage Calculations – Altus AFB KC-46A Project Scenarios**

Scenario	Total # of Workers <sup>a</sup>	Worker Fraction of 2008	Annual On Base VMT <sup>b</sup>
Year 2008	4,062	1.00	3,421,359
Year 2012	3,910	0.96	3,293,332
Year 2016 FTU	4,526	1.11	3,812,179
Year 2016 MOB 1	5,831	1.44	4,911,360

<sup>a</sup> For year 2008, # of personnel obtained from 2008 Altus AFB Economic Impacts Statement (Altus AFB Comptroller Squadron 2008) and EIS Tables 2-4 and 2-7 for all other scenarios.

<sup>b</sup> Distance from gate to center of Altus AFB, except shorter distance to lunch locations.

**Key:** # = number, AFB = Air Force Base, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, VMT = vehicle miles traveled.

**Table D.1-30. Annual Average On-Road Emission Factors –  
Altus AFB KC-46A Proposed Actions**

Project Year/ Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>Year 2008</b>										
LDGV	0.50	8.30	0.60	0.07	0.71	0.20	368	0.00	0.00	368
HDDV	2.00	10.90	6.50	0.51	7.73	2.01	1,246	0.00	0.00	1,246
Composite <sup>b</sup>	0.50	8.31	0.62	0.07	0.73	0.21	371	0.00	0.00	371
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.23	0.39	0.00	0.02	0.01	321	0.00	0.00	321
HDDV - Road 3	0.42	2.51	10.25	0.01	0.56	0.50	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.06	2.23	0.42	0.00	0.02	0.01	326	0.00	0.00	326
<b>Year 2016 FTU</b>										
LDGV - Road 3	0.03	1.65	0.19	0.00	0.02	0.01	302	0.00	0.00	302
HDDV - Road 3	0.25	1.57	6.44	0.01	0.36	0.30	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.03	1.65	0.21	0.00	0.02	0.01	307	0.00	0.00	307

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Jackson County

<sup>b</sup> Equal to 99.7/0.3% LDGV/HDDV.

**Key:** % = percent, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-31. Annual Emissions from On Base On-Road Vehicle Activities –  
Altus AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
Year 2008	1.90	31.30	2.30	0.28	2.75	0.77	1,416	0.003	0.001	1,416
Year 2012	0.23	8.09	1.49	0.02	0.07	0.04	1,198	0.002	0.000	1,198
Year 2016 FTU	0.13	6.91	0.87	0.02	0.08	0.04	1,307	0.003	0.001	1,308
Year 2016 MOB 1	0.16	8.90	1.12	0.03	0.10	0.05	1,684	0.003	0.001	1,685

**Note:** Future year emissions = 2008 emissions \* future scenario worker fraction of 2008 \* future scenario year vehicle emission factor/ 2008 vehicle emission factor.

**Key:** CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-32. Annual Off-Base On-Road Vehicle Trip Calculations –  
Altus AFB Year 2008**

Trip Type	Total # of Workers <sup>a</sup>	Round Trips per Year	Round Trips per Year Off Base	Miles per Round Trip <sup>b</sup>	Total VMT for Off Base Trips <sup>c</sup>
<b>Workers</b>					
Military - Off Base Residents <sup>d</sup>	879	250	219,780	7.0	1,538,460
Civilian	1,286	250	321,500	7.0	2,250,500
Contractor	905	250	226,250	7.0	1,583,750
Lunch Trips Off-Base	1,535	250	383,765	4.0	1,535,060
<b>Retirees</b>					
Local	1,440	104	149,760	7.0	1,048,320
<b>Events</b>					
Air Show	5,000	1	5,000	7.0	35,000
Miscellaneous	842	1	842	7.0	5,894
<b>HDDV</b>					
Buses	1	3,322	3,322	7.0	23,254
Fuel Deliveries	1	1,347	1,347	7.0	9,429
<b>Week-End</b>					
Military - On Base Residents <sup>d</sup>	440	104	45,714	7.0	320,000
<b>Totals - LDGV<sup>c</sup></b>			<b>1,352,611</b>		<b>8,316,984</b>
<b>Totals - HDDV<sup>c</sup></b>			<b>4,669</b>		<b>32,683</b>
<b>Total Trips</b>			<b>1,357,280</b>		<b>8,349,667</b>

<sup>a</sup> For year 2008, # of personnel obtained from Altus AFB Comptroller Squadron 2008, except see (d).

<sup>b</sup> Distance from gate to center of town, except shorter distance to lunch locations.

<sup>c</sup> All vehicles other than buses and fuel delivery trucks are LDGV.

<sup>d</sup> # of personnel estimated from Altus AFB Comptroller Squadron 2011.

**Key:** # = number, AFB = Air Force Base, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle.

**Table D.1-33. Annual Off Base On-Road Vehicle Mileage Calculations –  
Altus AFB KC-46A Project Scenarios**

Scenario	# of Workers	Fraction of 2008	LDGV Off Base VMT	HDDV Off Base VMT
Year 2008	4,062	1.00	8,316,984	32,683
Year 2012	3,910	0.96	8,005,762	31,460
Year 2016 FTU	4,526	1.11	9,267,028	36,416
Year 2016 MOB 1	5,831	1.44	11,939,028	46,916

**Key:** # = number, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, VMT = vehicle miles traveled.

**Table D.1-34. Annual Average On-Road Emission Factors –  
Altus AFB KC-46A Proposed Actions**

Project Year/ Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
LDGV - Road 3	0.12	3.58	0.66	0.01	0.02	0.01	323.76	0.001	0.0001	324
LDGV - Road 5	0.18	4.61	0.70	0.01	0.04	0.01	401.92	0.001	0.0002	402
LDGV - Composite <sup>b</sup>	0.16	4.35	0.69	0.01	0.03	0.01	382.38	0.00	0.00	382.45
HDDV - Road 3	0.03	3.38	0.78	0.00	0.04	0.04	101.04	0.000	0.000	101
HDDV - Road 5	0.02	4.95	0.46	0.00	0.34	0.03	61.00	0.000	0.000	61
HDDV - Composite <sup>b</sup>	0.02	4.56	0.54	0.00	0.26	0.03	71.01	0.00	0.00	71.02
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.23	0.39	0.00	0.02	0.01	321	0.001	0.0001	321
LDGV - Road 5	0.09	2.87	0.41	0.01	0.03	0.01	397	0.001	0.0002	398
LDGV - Composite <sup>b</sup>	0.08	2.71	0.40	0.01	0.03	0.01	378.36	0.00	0.00	378.42
HDDV - Road 3	0.42	2.51	10.25	0.01	0.56	0.50	1,949	0.001	0.001	1,949
HDDV - Road 5	0.66	3.67	12.60	0.02	1.00	0.83	2,426	0.001	0.001	2,427
HDDV - Composite <sup>b</sup>	0.60	3.38	12.01	0.02	0.89	0.74	2,306.87	0.00	0.00	2,307.23
<b>Year 2016 FTU or MOB 1</b>										
LDGV - Road 3	0.03	1.65	0.19	0.00	0.02	0.01	302	0.001	0.0001	302
LDGV - Road 5	0.04	2.11	0.19	0.01	0.03	0.01	374	0.001	0.0002	374
LDGV - Composite <sup>b</sup>	0.04	1.99	0.19	0.01	0.03	0.01	355.79	0.00	0.00	355.85
HDDV - Road 3	0.25	1.57	6.44	0.01	0.36	0.30	1,949	0.001	0.001	1,949
HDDV - Road 5	0.40	2.29	8.00	0.02	0.67	0.51	2,427	0.001	0.001	2,427
HDDV - Composite <sup>b</sup>	0.37	2.11	7.61	0.02	0.59	0.46	2,307.18	0.00	0.00	2,307.54

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Jackson County

<sup>b</sup> Equal to 25/75% road 3/road 5 conditions.

**Key:** % = percent, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-35. Annual Emissions from Off-Base On-Road Vehicle Activities –  
Altus AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
LDGV	1.49	39.88	6.33	0.11	0.29	0.12	3,506	0.01	0.00	3,506
HDDV	0.00	0.16	0.02	0.00	0.01	0.00	3	0.00	0.00	3
<b>Total</b>	<b>1.49</b>	<b>40.04</b>	<b>6.35</b>	<b>0.11</b>	<b>0.30</b>	<b>0.13</b>	<b>3,508</b>	<b>0.01</b>	<b>0.00</b>	<b>3,509</b>
<b>Year 2012</b>										
LDGV	0.70	23.91	3.53	0.05	0.26	0.10	3,339	0.01	0.00	3,339
HDDV	0.02	0.12	0.42	0.00	0.03	0.03	80	0.00	0.00	80
<b>Total</b>	<b>0.72</b>	<b>24.03</b>	<b>3.95</b>	<b>0.05</b>	<b>0.29</b>	<b>0.13</b>	<b>3,419</b>	<b>0.01</b>	<b>0.00</b>	<b>3,419</b>
<b>Year 2016 FTU</b>										
LDGV	0.36	20.37	1.98	0.05	0.30	0.12	3,634	0.01	0.00	3,635
HDDV	0.01	0.08	0.31	0.00	0.02	0.02	93	0.00	0.00	93
<b>Total</b>	<b>0.38</b>	<b>20.45</b>	<b>2.28</b>	<b>0.06</b>	<b>0.33</b>	<b>0.14</b>	<b>3,727</b>	<b>0.01</b>	<b>0.00</b>	<b>3,728</b>
<b>Year 2016 MOB 1</b>										
LDGV	0.47	26.24	2.55	0.07	0.39	0.15	4,682	0.01	0.00	4,683
HDDV	0.02	0.11	0.39	0.00	0.03	0.02	119	0.00	0.00	119
<b>Total</b>	<b>0.49</b>	<b>26.35</b>	<b>2.94</b>	<b>0.07</b>	<b>0.42</b>	<b>0.18</b>	<b>4,802</b>	<b>0.01</b>	<b>0.00</b>	<b>4,802</b>

**Key:** CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-36. Nonroad Equipment Usages – Year 2008 Altus AFB**

Source	Fuel Type	Hp	Hrs/Yr	Load Factor	Annual Hp-Hrs	Average Hp
Mower	Diesel	27	1,200	55	17,820	4.90
Tractor	Diesel	75	533	70	27,983	6.05
Generator	Diesel	1.9	40	74	56	0.01
Mule	Diesel	12	1,200	49	7,056	2.18
Truck	Diesel	325	167	57	30,937	8.21
Forklift	Diesel	49	120	30	1,764	0.89
Trash	Diesel	454	13	57	3,364	0.89
Garbage	Diesel	210	40	57	4,788	1.27
Mower	Diesel	56	500	55	15,400	4.24
Tractor	Diesel	56	250	70	9,800	2.12
Mower	Diesel	29	900	55	14,355	3.95
Tractor	Diesel	63	6	70	265	0.06
Mower	Diesel	22	150	55	1,815	0.50
Fairway	Diesel	29	900	55	14,355	3.95
Mules	Diesel	16	278	49	2,180	0.67
Mules	Diesel	16	313	49	2,454	0.76
<b>Totals - Diesel Equipment</b>			<b>6,610</b>		<b>154,391</b>	
Truck	Gasoline	360	800	80	230,400	43.57
Weedeater	Gasoline	1.5	571	68	582	0.13
Blowers	Gasoline	2.5	750	75	1,406	0.28
Trimmers	Gasoline	1.4	10	68	10	0.00
Gator	Gasoline	20	50	46	460	0.15
Truck	Gasoline	240	167	80	32,064	6.06
Sprayer	Gasoline	6.5	200	65	845	0.20
Trash	Gasoline	454	400	80	145,280	27.47
Gator	Gasoline	20	250	46	2,300	0.76
Compressor	Gasoline	5	24	56	67	0.02
Sprayer	Gasoline	7	12	65	55	0.01
Mower	Gasoline	56	500	70	19,600	4.24
Sod	Gasoline	16	5	58	46	0.01
Sprayer	Gasoline	5.5	50	65	179	0.04
Aerator	Gasoline	23	20	58	267	0.07
Greens	Gasoline	22	50	78	858	0.17
Mower	Gasoline	16	400	70	4,480	0.97
Cart	Gasoline	31	250	46	3,565	1.17
Sand	Gasoline	16	220	58	2,042	0.53
Power	Gasoline	7	100	85	595	0.11
Gators	Gasoline	20	200	46	1,840	0.61
ATV	Gasoline	27	375	72	7,290	1.53
ATV	Gasoline	46	375	72	12,420	2.61
EZ	Gasoline	13	333	46	1,991	0.65
Gators	Gasoline	18	455	46	3,767	1.24
Push	Gasoline	6	26	70	109	0.02
<b>Totals - Gasoline Equipment</b>			<b>6,593</b>		<b>472,518</b>	<b>93</b>
<b>Totals - All Equipment</b>			<b>13,203</b>		<b>626,909</b>	

**Key:** ATV = All-Terrain Vehicle, Hp = horsepower, hr = hour, yr = year.

**Table D.1-37. Annual Average Nonroad Equipment Emission Factors – Altus AFB KC-46A Scenarios**

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2008</b>										
41-50 HP Diesel	0.48	2.70	4.90	0.13	0.53	0.49	593	0.094	0.007	597
75-100 HP Gasoline	2.42	72.41	7.06	0.09	0.06	0.06	429	1.69	0.0003	465
Composite <sup>b</sup>	1.78	49.41	6.35	0.10	0.22	0.20	483	1.16	0.00	508
<b>Year 2012</b>										
41-50 HP Diesel	0.50	2.56	4.93	0.13	0.45	0.41	610	0.094	0.007	614
75-100 HP Gasoline	1.31	41.19	3.83	0.08	0.06	0.06	429	1.69	0.0003	465
Composite <sup>b</sup>	1.04	28.44	4.19	0.10	0.19	0.17	489	1.16	0.00	514
<b>Year 2016 FTU or MOB 1</b>										
41-50 HP Diesel	0.32	1.40	3.99	0.11	0.30	0.28	610	0.094	0.007	614
75-100 HP Gasoline	0.71	23.96	1.99	0.08	0.06	0.06	429	1.69	0.0003	465
Composite <sup>b</sup>	0.58	16.52	2.65	0.09	0.14	0.13	489	1.16	0.00	514

**Table D.1-37. Annual Average Nonroad Equipment Emission Factors –  
Altus AFB KC-46A Scenarios (Continued)**

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
<b>Year 2008</b>										
41-50 HP Diesel	0.036	0.006	0.010	0.001	–	–	–	–	–	–
75-100 HP Gasoline	0.010	0.002	0.127	0.002	–	–	–	–	–	–
Composite <sup>b</sup>	0.018	0.003	0.088	0.002	–	–	–	–	–	–
<b>Year 2012</b>										
41-50 HP Diesel	0.037	0.006	0.010	0.001	–	–	–	–	–	–
75-100 HP Gasoline	0.005	0.001	0.069	0.001	–	–	–	–	–	–
Composite <sup>b</sup>	0.016	0.003	0.049	0.001	–	–	–	–	–	–
<b>Year 2016 FTU or MOB 1</b>										
41-50 HP Diesel	0.024	0.004	0.006	0.001	–	–	–	–	–	–
75-100 HP Gasoline	0.003	0.000	0.037	0.001	–	–	–	–	–	–
Composite <sup>b</sup>	0.010	0.002	0.027	0.001	–	–	–	–	–	–

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphtha- lene	Phenol
<b>Year 2008</b>										
41-50 HP Diesel	–	–	0.001	0.072	0.001	–	–	–	–	–
75-100 HP Gasoline	–	–	0.048	0.028	0.024	–	–	0.387	–	–
Composite <sup>b</sup>	–	–	0.033	0.043	0.016	–	–	0.260	–	–
<b>Year 2012</b>										
41-50 HP Diesel	–	–	0.002	0.075	0.001	–	–	–	–	–
75-100 HP Gasoline	–	–	0.026	0.015	0.013	–	–	0.210	–	–
Composite <sup>b</sup>	–	–	0.018	0.035	0.009	–	–	0.141	–	–
<b>Year 2016 FTU or MOB 1</b>										
41-50 HP Diesel	–	–	0.001	0.048	0.001	–	–	–	–	–
75-100 HP Gasoline	–	–	0.014	0.008	0.007	–	–	0.114	–	–
Composite <sup>b</sup>	–	–	0.010	0.021	0.005	–	–	0.076	–	–

HP Category/ Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene
<b>Year 2008</b>										
41-50 HP Diesel	0.000	0.005	0.000	–	–	0.007	–	–	–	0.005
75-100 HP Gasoline	0.000	0.992	0.002	–	–	0.174	–	–	–	0.164
Composite <sup>b</sup>	0.000	0.666	0.001	–	–	0.119	–	–	–	0.112
<b>Year 2012</b>										
41-50 HP Diesel	0.000	0.005	0.000	–	–	0.008	–	–	–	0.005
75-100 HP Gasoline	0.000	0.537	0.001	–	–	0.094	–	–	–	0.089
Composite <sup>b</sup>	0.000	0.361	0.001	–	–	0.065	–	–	–	0.061
<b>Year 2016 FTU or MOB 1</b>										
41-50 HP Diesel	0.000	0.003	0.000	–	–	0.005	–	–	–	0.003
75-100 HP Gasoline	0.000	0.291	0.001	–	–	0.051	–	–	–	0.048
Composite <sup>b</sup>	0.000	0.196	0.000	–	–	0.036	–	–	–	0.033

<sup>a</sup> Data estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Jackson County, OK.

<sup>b</sup> Assumes a vehicle fleet mix of 0.33/0.67 diesel/gasoline-powered equipment = 2008 fleet mix.

**Key:** – = Source does not emit particular pollutant, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, Hp = horsepower, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, OK = Oklahoma, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-38. Annual Emissions from Nonroad Equipment Activities –  
Altus AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2008	14.70	201.00	4.90	0.50	0.40	0.40	2,340	5.64	0.01	2,462
Year 2012	8.29	111.38	3.12	0.45	0.34	0.34	2,279	5.43	0.01	2,396
Year 2016 FTU	5.35	74.86	2.28	0.49	0.29	0.29	2,639	6.29	0.01	2,775
Year 2016 MOB 1	6.89	96.45	2.94	0.63	0.37	0.37	3,400	8.10	0.02	3,575

Scenario Year/ Source Type	Tons per Year									
	Acetalde- hyde	Acrolein	Benzene	1,3- Buta- diene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
Year 2008	0.013	0.002	0.061	0.001	–	–	–	–	–	–
Year 2012	0.011	0.002	0.033	0.001	–	–	–	–	–	–
Year 2016 FTU	0.008	0.001	0.021	0.000	–	–	–	–	–	–
Year 2016 MOB 1	0.010	0.002	0.027	0.001	–	–	–	–	–	–

Scenario Year/ Source Type	Tons per Year									
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methyl- ene Chloride	MTBE	Naphth- alene	Phenol
Year 2008	–	–	0.023	0.029	0.011	–	–	0.179	–	–
Year 2012	–	–	0.012	0.023	0.006	–	–	0.093	–	–
Year 2016 FTU	–	–	0.008	0.016	0.004	–	–	0.059	–	–
Year 2016 MOB 1	–	–	0.010	0.021	0.005	–	–	0.076	–	–

Scenario Year/ Source Type	Tons per Year									
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene
Year 2008	0.000	0.460	0.001	–	–	0.082	–	–	–	0.077
Year 2012	0.000	0.240	0.001	–	–	0.044	–	–	–	0.041
Year 2016 FTU	0.000	0.151	0.000	–	–	0.028	–	–	–	0.026
Year 2016 MOB 1	0.000	0.195	0.000	–	–	0.035	–	–	–	0.033

**Note:** Future year emissions = 2008 emissions \* future scenario worker fraction of 2008 \* future scenario year vehicle emission factor/ 2008 vehicle emission factor.

**Key:** – = Source does not emit particular pollutant; CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-39. Annual Emissions from Mobile Fuel Transfer Activities –  
Altus AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	Benzene	Cumene	Ethyl benzene	Hexane	MTBE	Naphth- alene	Toluene	2,2,4-Tri- methyl- pentane	Xylenes
Year 2008	0.10	0.0006	0.0003	0.0002	0.0001	0.0005	0.0000	0.0011	0.0001	0.0017
Year 2012	0.09	0.0006	0.0003	0.0002	0.0001	0.0005	0.0000	0.0010	0.0001	0.0016
Year 2016 FTU	0.11	0.0007	0.0003	0.0003	0.0001	0.0005	0.0000	0.0012	0.0001	0.0018
Year 2016 MOB 1	0.14	0.0009	0.0004	0.0003	0.0001	0.0007	0.0000	0.0016	0.0001	0.0024

**Note:** Future year emissions = 2008 emissions \* future year worker fraction of 2008.

**Key:** CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-40. Annual Emissions from Point and Area Sources –  
Altus AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
Year 2008	1.98	6.08	10.02	0.18	1.09	0.49	–	–	–	–
Year 2012	1.91	5.85	9.65	0.17	1.05	0.47	–	–	–	–
Year 2016 FTU	2.21	6.77	11.16	0.20	1.21	0.54	–	–	–	–
Year 2016 MOB 1	2.84	8.73	14.38	0.26	1.56	0.70	–	–	–	–

Scenario Year/ Source Type	Tons per Year									
	Acetalde- hyde	Acrolein	Benzene	1,3- Buta- diene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane
Year 2008	–	–	–	–	–	–	–	–	–	–
Year 2012	–	–	–	–	–	–	–	–	–	–
Year 2016 FTU	–	–	–	–	–	–	–	–	–	–
Year 2016 MOB 1	–	–	–	–	–	–	–	–	–	–

Scenario Year/ Source Type	Tons per Year									
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methyl- ene Chloride	MTBE	Naphth- alene	Phenol
Year 2008	–	–	–	–	0.116	–	–	–	–	–
Year 2012	–	–	–	–	0.11	–	–	–	–	–
Year 2016 FTU	–	–	–	–	0.13	–	–	–	–	–
Year 2016 MOB 1	–	–	–	–	0.17	–	–	–	–	–

Scenario Year/ Source Type	Tons per Year									
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene
Year 2008	–	–	–	–	–	0.008	–	–	–	0.008
Year 2012	–	–	–	–	–	0.01	–	–	–	0.01
Year 2016 FTU	–	–	–	–	–	0.01	–	–	–	0.01
Year 2016 MOB 1	–	–	–	–	–	0.01	–	–	–	0.01

**Note:** Future year emissions = 2008 emissions \* future year worker fraction of 2008.

**Key:** – = Source does not emit particular pollutant, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-41. Annual Emissions for Operations at Altus AFB – Year 2008**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
C-17 Aircraft Operations	87.74	794.00	2,745.60	232.00	686.68	686.68	425,379	11.772	13.227	429,726
KC-135 Aircraft Operations	13.10	525.00	713.00	121.00	176.00	176.00	221,857	6.140	6.899	224,125
Transient Aircraft Operations	0.79	2.90	1.80	0.18	0.44	0.44	330	0.009	0.010	333
On-Wing Aircraft Engine Testing - C-17	10.90	120.00	35.40	9.40	54.10	54.10	17,235	0.477	0.536	17,411
On-Wing Aircraft Engine Testing - KC-135	4.30	126.00	25.20	8.70	42.50	42.50	15,952	0.441	0.496	16,115
Aerospace Ground Support Equipment	5.70	15.30	71.00	4.70	5.04	5.00	15,753	2.61	0.19	15,864.93
Government Motor Vehicles	0.13	3.50	1.57	0.52	1.90	0.50	345	—	—	—
Privately-Owned Vehicles - On-Base	1.90	31.30	2.30	0.28	2.75	0.77	1,416	—	—	—
Privately-Owned Vehicles - Off-Base	1.49	40.04	6.35	0.11	0.30	0.13	3,508	—	—	—
Nonroad Equipment	14.70	201.00	4.90	0.50	0.40	0.40	2,340	5.64	0.01	2,462.34
Mobile Fuel Transfer Operations	0.10	—	—	—	—	—	—	—	—	—
Point and Area Sources	1.98	6.08	10.02	0.18	1.09	0.49	—	—	—	—
<b>Total Emissions<sup>a</sup></b>	<b>142.82</b>	<b>1,865.12</b>	<b>3,617.14</b>	<b>377.57</b>	<b>971.20</b>	<b>967.00</b>	<b>704,115</b>	<b>27.09</b>	<b>21.37</b>	<b>706,038</b>

Source Type	Tons per Year							
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane
C-17 Aircraft Operations	0.318	—	0.675	—	0.025	—	0.122	0.018
KC-135 Aircraft Operations	—	—	0.170	—	—	0.020	0.264	0.107
Transient Aircraft Operations	0.002	0.002	0.003	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	0.040	—	0.084	—	0.003	—	0.015	0.002
On-Wing Aircraft Engine Testing - KC-135	—	—	0.056	—	—	0.007	0.087	0.035
Aerospace Ground Support Equipment	0.014	0.002	0.060	0.009	—	—	—	—
Government Motor Vehicles	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - On-Base	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - Off-Base	—	—	—	—	—	—	—	—
Nonroad Equipment	0.013	0.002	0.061	0.001	—	—	—	—
Mobile Fuel Transfer Operations	—	—	0.001	—	—	—	—	—
Point and Area Sources	—	—	—	—	—	—	—	—
<b>Total Emissions<sup>a</sup></b>	<b>0.39</b>	<b>0.01</b>	<b>1.11</b>	<b>0.01</b>	<b>0.03</b>	<b>0.03</b>	<b>0.49</b>	<b>0.16</b>

Source Type	Tons per Year							
	Cumene	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane
C-17 Aircraft Operations	—	0.067	0.167	0.665	0.270	0.075	7.574	—
KC-135 Aircraft Operations	—	—	—	—	0.631	0.047	6.905	—
Transient Aircraft Operations	—	—	—	—	—	0.000	0.012	—
On-Wing Aircraft Engine Testing - C-17	—	0.008	0.021	0.083	0.034	0.009	0.941	—
On-Wing Aircraft Engine Testing - KC-135	—	—	—	—	0.207	0.015	2.267	—
Aerospace Ground Support Equipment	—	—	—	—	—	0.018	0.027	0.009
Government Motor Vehicles	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - On-Base	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - Off-Base	—	—	—	—	—	—	—	—
Nonroad Equipment	—	—	—	—	—	0.023	0.029	0.011
Mobile Fuel Transfer Operations	0.000	—	—	—	—	0.000	—	0.000
Point and Area Sources	—	—	—	—	—	—	—	0.116
<b>Total Emissions<sup>a</sup></b>	<b>0.00</b>	<b>0.08</b>	<b>0.19</b>	<b>0.75</b>	<b>1.14</b>	<b>0.19</b>	<b>17.75</b>	<b>0.14</b>

**Table D.1-41. Annual Emissions for Operations at Altus AFB – Year 2008 (Continued)**

Source Type	Tons per Year							
	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene
C-17 Aircraft Operations	–	0.430	–	0.063	0.100	–	–	0.041
KC-135 Aircraft Operations	–	7.108	–	0.199	–	–	–	0.101
Transient Aircraft Operations	–	–	–	0.001	–	–	–	0.001
On-Wing Aircraft Engine Testing - C-17	–	0.053	–	0.008	0.012	–	–	0.005
On-Wing Aircraft Engine Testing - KC-135	–	2.333	–	0.065	–	–	–	0.033
Aerospace Ground Support Equipment	–	–	0.140	0.001	–	0.002	0.002	0.001
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	–	–	0.179	–	–	0.000	0.460	0.001
Mobile Fuel Transfer Operations	–	–	0.000	0.000	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>–</b>	<b>9.92</b>	<b>0.32</b>	<b>0.34</b>	<b>0.11</b>	<b>0.00</b>	<b>0.46</b>	<b>0.18</b>

Source Type	Tons per Year							
	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
C-17 Aircraft Operations	0.232	–	0.310	0.016	–	–	0.123	0.026
KC-135 Aircraft Operations	–	0.170	0.702	0.058	–	0.497	0.145	–
Transient Aircraft Operations	–	–	0.002	–	–	–	–	0.001
On-Wing Aircraft Engine Testing - C-17	0.029	–	0.038	0.002	–	–	0.015	0.003
On-Wing Aircraft Engine Testing - KC-135	–	0.056	0.231	0.019	–	0.163	0.048	–
Aerospace Ground Support Equipment	–	–	0.070	–	–	–	–	0.065
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	–	–	0.082	–	–	–	–	0.077
Mobile Fuel Transfer Operations	–	–	0.001	–	0.000	–	–	0.002
Point and Area Sources	–	–	0.008	–	–	–	–	0.008
<b>Total Emissions<sup>a</sup></b>	<b>0.26</b>	<b>0.23</b>	<b>1.44</b>	<b>0.09</b>	<b>0.00</b>	<b>0.66</b>	<b>0.33</b>	<b>0.18</b>

<sup>a</sup> Data from 2008 Mobile Source Air Emissions Inventory for Altus Air Force Base (Weston Solutions, Inc. 2008), except point and area sources obtained from 2008 Air Emissions Inventory Turn – Around Document (ODEQ 2010) and Off-Base POV emissions calculated with the use of typical trip lengths. However, CO<sub>2</sub> emissions estimated with widely acceptable factors.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, POV = privately-owned vehicle, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-42. Annual Emissions for Existing Operations at Altus AFB – Year 2012**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	125,665	3.48	3.91	115,409
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	65,544	1.81	2.04	60,195
Transient Aircraft	1.38	5.07	3.15	0.31	0.77	0.77	577	0.02	0.02	530
On-Wing Aircraft Engine Testing - C-17	10.90	—	—	—	—	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,956	0.05	0.06	1,796
On-Wing Aircraft Engine Testing - KC-135	0.99	14.32	7.07	0.82	0.05	0.05	2,481	0.07	0.08	2,278
Aerospace Ground Support Equipment	0.84	6.08	7.11	0.20	0.94	0.86	5,181	0.80	0.06	4,741
Government Motor Vehicles	0.11	0.98	2.34	0.00	0.13	0.11	487	0.00	0.00	443
Privately-Owned Vehicles - On-Base	0.23	8.09	1.49	0.02	0.07	0.04	1,198	0.00	0.00	1,089
Privately-Owned Vehicles - Off-Base	0.72	24.03	3.95	0.05	0.29	0.13	3,419	0.01	0.00	3,109
Nonroad Equipment	8.29	111.38	3.12	0.45	0.34	0.34	2,279	5.43	0.01	2,178
Mobile Fuel Transfer Operations	0.09	—	—	—	—	—	—	—	—	—
Point and Area Sources	1.91	5.85	9.65	0.17	1.05	0.47	—	—	—	—
<b>Total Emissions</b>	<b>55.39</b>	<b>573.25</b>	<b>1,069.38</b>	<b>106.96</b>	<b>262.74</b>	<b>261.86</b>	<b>208,787</b>	<b>11.67</b>	<b>6.17</b>	<b>191,769</b>

Source Type	Tons per Year							
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane
C-17 Aircraft Operations	0.094	—	0.199	—	0.007	—	0.036	0.005
KC-135 Aircraft Operations	—	—	0.050	—	—	0.006	0.078	0.032
Transient Aircraft	0.003	0.004	0.006	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	—	—	—	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	0.004	—	0.008	—	0.000	—	0.001	0.000
On-Wing Aircraft Engine Testing - KC-135	—	—	0.001	—	—	0.000	0.001	0.001
Aerospace Ground Support Equipment	0.002	0.000	0.009	0.001	—	—	—	—
Government Motor Vehicles	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - On-Base	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - Off-Base	—	—	—	—	—	—	—	—
Nonroad Equipment	0.011	0.002	0.033	0.001	—	—	—	—
Mobile Fuel Transfer Operations	—	—	—	—	—	—	—	—
Point and Area Sources	—	—	—	—	—	—	—	—
<b>Total Emissions</b>	<b>0.114</b>	<b>0.006</b>	<b>0.307</b>	<b>0.002</b>	<b>0.007</b>	<b>0.006</b>	<b>0.116</b>	<b>0.037</b>

Source Type	Tons per Year							
	Cumene	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane
C-17 Aircraft Operations	—	0.020	0.049	0.197	0.080	0.022	2.237	—
KC-135 Aircraft Operations	—	—	—	—	0.186	0.014	2.040	—
Transient Aircraft	—	—	—	—	—	0.001	0.021	—
On-Wing Aircraft Engine Testing - C-17	—	—	—	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	—	0.000	0.001	0.003	0.001	0.001	0.083	—
On-Wing Aircraft Engine Testing - KC-135	—	—	—	—	0.003	0.000	0.046	—
Aerospace Ground Support Equipment	—	—	—	—	—	0.003	0.004	0.001
Government Motor Vehicles	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - On-Base	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - Off-Base	—	—	—	—	—	—	—	—
Nonroad Equipment	—	—	—	—	—	0.012	0.023	0.006
Mobile Fuel Transfer Operations	0.000	—	—	—	—	0.000	—	0.000
Point and Area Sources	—	—	—	—	—	—	—	0.112
<b>Total Emissions</b>	<b>0.000</b>	<b>0.020</b>	<b>0.050</b>	<b>0.200</b>	<b>0.271</b>	<b>0.053</b>	<b>4.454</b>	<b>0.119</b>

**Table D.1-42. Annual Emissions for Existing Operations at Altus AFB – Year 2012 (Continued)**

Source Type	Tons per Year							
	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene
C-17 Aircraft Operations	–	0.127	–	0.019	0.030	–	–	0.012
KC-135 Aircraft Operations	–	2.100	–	0.059	–	–	–	0.030
Transient Aircraft	–	–	–	0.002	–	–	–	0.001
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	–	0.002	–	0.001	0.001	–	–	0.001
On-Wing Aircraft Engine Testing - KC-135	–	0.036	–	0.001	–	–	–	0.001
Aerospace Ground Support Equipment	–	–	0.021	0.000	–	0.000	0.000	0.000
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	–	–	0.093	–	–	0.000	0.240	0.001
Mobile Fuel Transfer Operations	–	–	0.000	0.000	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–
<b>Total Emissions</b>	–	<b>2.265</b>	<b>0.114</b>	<b>0.081</b>	<b>0.031</b>	<b>0.000</b>	<b>0.241</b>	<b>0.045</b>

Source Type	Tons per Year							
	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
C-17 Aircraft Operations	0.069	–	0.092	0.005	–	–	0.036	0.008
KC-135 Aircraft Operations	–	0.050	0.207	0.017	–	0.147	0.043	–
Transient Aircraft	–	–	0.003	–	–	–	–	0.002
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	0.001	–	0.003	0.000	–	–	0.001	0.000
On-Wing Aircraft Engine Testing - KC-135	–	0.001	0.005	0.000	–	0.003	0.001	–
Aerospace Ground Support Equipment	–	–	0.010	–	–	–	–	0.010
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	–	–	0.044	–	–	–	–	0.041
Mobile Fuel Transfer Operations	–	–	0.001	–	0.000	–	–	0.002
Point and Area Sources	–	–	0.008	–	–	–	–	0.008
<b>Total Emissions</b>	<b>0.070</b>	<b>0.051</b>	<b>0.372</b>	<b>0.022</b>	<b>0.000</b>	<b>0.150</b>	<b>0.081</b>	<b>0.070</b>

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, mt = metric tons, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-43. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at Altus AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-46A Aircraft Operations	34.63	157.55	1,034.50	54.09	3.35	2.84	163,451	4.52	5.08	150,110
On-Wing Aircraft Engine Testing - KC-46A	14.14	48.41	23.62	1.88	0.17	0.15	5,690	0.16	0.18	5,226
Aerospace Ground Support Equipment - KC-46A	0.13	0.98	1.11	0.04	0.16	0.15	1,199	0.19	0.00	1,094
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	125,665	3.48	3.91	115,409
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	65,544	1.81	2.04	60,195
Transient Aircraft	1.38	5.07	3.15	0.31	0.77	0.77	577	0.02	0.02	530
On-Wing Aircraft Engine Testing - C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,956	0.05	0.06	1,633
On-Wing Aircraft Engine Testing - KC-135	0.99	14.32	7.07	0.82	0.05	0.05	2,481	0.07	0.08	2,071
Aerospace Ground Support Equipment - Existing Aircraft	0.59	4.27	4.83	0.19	0.71	0.65	5,181	0.80	0.06	4,741
Government Motor Vehicles	0.08	0.79	1.70	0.00	0.09	0.08	561	0.00	0.00	510
Privately-Owned Vehicles - On-Base	0.13	6.91	0.87	0.02	0.08	0.04	1,307	0.00	0.00	1,189
Privately-Owned Vehicles - Off-Base	0.38	20.45	2.28	0.06	0.33	0.14	3,727	0.01	0.00	3,389
Nonroad Equipment	5.35	74.86	2.28	0.49	0.29	0.29	2,639	6.29	0.01	2,523
Mobile Fuel Transfer Operations	0.11	–	–	–	–	–	–	–	–	–
Point and Area Sources	2.21	6.77	11.16	0.20	1.21	0.54	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>90.06</b>	<b>737.82</b>	<b>2,124.08</b>	<b>163.02</b>	<b>266.31</b>	<b>264.79</b>	<b>379,978</b>	<b>17.39</b>	<b>11.43</b>	<b>348,618</b>
<b>Year 2012 Base Case Emissions</b>	<b>(55.39)</b>	<b>(573.25)</b>	<b>(1,069.38)</b>	<b>(106.96)</b>	<b>(262.74)</b>	<b>(261.86)</b>	<b>(208,787)</b>	<b>(11.67)</b>	<b>(6.17)</b>	<b>(191,769)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>34.67</b>	<b>164.57</b>	<b>1,054.70</b>	<b>56.06</b>	<b>3.58</b>	<b>2.93</b>	<b>171,191</b>	<b>5.72</b>	<b>5.26</b>	<b>156,850</b>
<b>Jackson County PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>0.63</b>	<b>0.29</b>	<b>0.99</b>	<b>0.52</b>	<b>0.01</b>	<b>0.01</b>	<b>0.82</b>	<b>0.49</b>	<b>0.85</b>	<b>0.82</b>

Source Type	Tons per Year							
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane
KC-46A Aircraft Operations	1.492	0.856	0.587	0.589	–	–	–	–
On-Wing Aircraft Engine Testing - KC-46A	0.608	0.349	0.239	0.240	–	–	–	–
Aerospace Ground Support Equipment - KC-46A	0.000	0.000	0.001	0.000	–	–	–	–
C-17 Aircraft Operations	0.094	–	0.199	–	0.007	–	0.036	0.005
KC-135 Aircraft Operations	–	–	0.050	–	–	0.006	0.078	0.032
Transient Aircraft	0.003	0.004	0.006	–	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	0.004	–	0.008	–	0.000	–	0.001	0.000
On-Wing Aircraft Engine Testing - KC-135	–	–	0.001	–	–	0.000	0.001	0.001
Aerospace Ground Support Equipment - Existing Aircraft	0.001	0.000	0.006	0.001	–	–	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	0.008	0.001	0.021	0.000	–	–	–	–
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>2.21</b>	<b>1.21</b>	<b>1.12</b>	<b>0.83</b>	<b>0.007</b>	<b>0.01</b>	<b>0.12</b>	<b>0.04</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.114)</b>	<b>(0.006)</b>	<b>(0.307)</b>	<b>(0.002)</b>	<b>(0.007)</b>	<b>(0.006)</b>	<b>(0.116)</b>	<b>(0.037)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.097</b>	<b>1.204</b>	<b>0.813</b>	<b>0.829</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Jackson County PSD Thresholds</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>18.41</b>	<b>211.60</b>	<b>2.65</b>	<b>395.79</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.1-43. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at Altus AFB – Year 2016 (Continued)**

Source Type	Tons per Year						
	<i>Cumene</i>	<i>Dibutyl Phthalate</i>	<i>1,2-Dichloro-propane</i>	<i>2,4-Dinitro-phenol</i>	<i>DEHP</i>	<i>Ethyl-benzene</i>	<i>Formaldehyde</i>
KC-46A Aircraft Operations	–	–	–	–	–	0.061	4.300
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	–	–	0.025	1.752
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	0.000	0.001
C-17 Aircraft Operations	–	0.020	0.049	0.197	0.080	0.022	2.237
KC-135 Aircraft Operations	–	–	–	–	0.186	0.014	2.040
Transient Aircraft	–	–	–	–	–	0.001	0.021
On-Wing Aircraft Engine Testing - C-17	–	–	0.000	0.001	0.003	0.001	0.001
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	0.003	0.000
Aerospace Ground Support Equipment - Existing Aircraft	–	–	–	–	–	0.002	0.003
Government Motor Vehicles	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Nonroad Equipment	–	–	–	–	–	0.008	0.016
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	–	<b>0.02</b>	<b>0.05</b>	<b>0.20</b>	<b>0.27</b>	<b>0.14</b>	<b>10.37</b>
<b>Year 2012 Base Case Emissions</b>	–	<b>(0.020)</b>	<b>(0.050)</b>	<b>(0.200)</b>	<b>(0.271)</b>	<b>(0.053)</b>	<b>(4.454)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	–	<b>(0.000)</b>	<b>(0.001)</b>	<b>(0.003)</b>	<b>(0.001)</b>	<b>0.084</b>	<b>5.917</b>
<b>Jackson County PSD Thresholds</b>	–	–	–	–	–	–	–
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	–	<b>(0.02)</b>	<b>(0.01)</b>	<b>(0.01)</b>	<b>(0.00)</b>	<b>1.60</b>	<b>1.33</b>

Source Type	Tons per Year							
	<i>Hexane</i>	<i>Methanol</i>	<i>Methylene Chloride</i>	<i>MTBE</i>	<i>Naphthalene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propionaldehyde</i>
KC-46A Aircraft Operations	–	0.631	–	–	0.189	0.254	–	–
On-Wing Aircraft Engine Testing - KC-46A	–	0.257	–	–	0.077	0.103	–	–
Aerospace Ground Support Equipment - KC-46A	0.000	–	–	0.003	0.000	–	0.000	0.000
C-17 Aircraft Operations	–	–	0.127	–	0.019	0.030	–	–
KC-135 Aircraft Operations	–	–	2.100	–	0.059	–	–	–
Transient Aircraft	–	–	–	–	0.002	–	–	–
On-Wing Aircraft Engine Testing - C-17	0.083	–	–	0.002	–	0.001	0.001	–
On-Wing Aircraft Engine Testing - KC-135	0.046	–	–	0.036	–	0.001	–	–
Aerospace Ground Support Equipment - Existing Aircraft	0.001	–	–	0.014	0.000	–	0.000	0.000
Government Motor Vehicles	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–
Nonroad Equipment	0.004	–	–	0.059	–	–	0.000	0.151
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–
Point and Area Sources	0.129	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.26</b>	<b>0.89</b>	<b>2.23</b>	<b>0.11</b>	<b>0.35</b>	<b>0.39</b>	<b>0.00</b>	<b>0.15</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.119)</b>	<b>–</b>	<b>(2.265)</b>	<b>(0.114)</b>	<b>(0.081)</b>	<b>(0.031)</b>	<b>(0.000)</b>	<b>(0.241)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.144</b>	<b>0.888</b>	<b>(0.038)</b>	<b>(0.000)</b>	<b>0.264</b>	<b>0.358</b>	<b>0.001</b>	<b>(0.090)</b>
<b>Jackson County PSD Thresholds</b>	–	–	–	–	–	–	–	–
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>1.21</b>	<b>–</b>	<b>(0.02)</b>	<b>(0.00)</b>	<b>3.24</b>	<b>11.56</b>	<b>3.50</b>	<b>(0.37)</b>

**Table D.1-43. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at Altus AFB – Year 2016 (Continued)**

Source Type	Tons per Year								
	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-46A Aircraft Operations	0.108	–	–	0.224	–	–	–	0.099	0.058
On-Wing Aircraft Engine Testing - KC-46A	0.044	–	–	0.091	–	–	–	0.040	0.024
Aerospace Ground Support Equipment - KC-46A	0.000	–	–	0.002	–	–	–	–	0.002
C-17 Aircraft Operations	0.012	0.069	–	0.092	0.005	–	–	0.036	0.008
KC-135 Aircraft Operations	0.030	–	0.050	0.207	0.017	–	0.147	0.043	–
Transient Aircraft	0.001	–	–	0.003	–	–	–	–	0.002
On-Wing Aircraft Engine Testing - C-17	–	0.001	0.001	–	0.003	–	0.000	–	–
On-Wing Aircraft Engine Testing - KC-135	–	0.001	–	0.001	0.005	–	0.000	–	0.003
Aerospace Ground Support Equipment - Existing Aircraft	0.000	–	–	0.007	–	–	–	–	0.007
Government Motor Vehicles	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–
Nonroad Equipment	0.000	–	–	0.028	–	–	–	–	0.026
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	0.009	–	–	–	–	0.009
<b>Total Proposed Emissions - 2016</b>	<b>0.20</b>	<b>0.07</b>	<b>0.05</b>	<b>0.66</b>	<b>0.03</b>	<b>–</b>	<b>0.15</b>	<b>0.22</b>	<b>0.14</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.045)</b>	<b>(0.070)</b>	<b>(0.051)</b>	<b>(0.372)</b>	<b>(0.022)</b>	<b>–</b>	<b>(0.150)</b>	<b>(0.081)</b>	<b>(0.070)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.151</b>	<b>(0.000)</b>	<b>0.000</b>	<b>0.292</b>	<b>0.007</b>	<b>–</b>	<b>(0.003)</b>	<b>0.137</b>	<b>0.068</b>
<b>Jackson County PSD Thresholds</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>3.37</b>	<b>(0.00)</b>	<b>0.00</b>	<b>0.79</b>	<b>0.30</b>	<b>–</b>	<b>(0.02)</b>	<b>1.69</b>	<b>0.97</b>

**Key:** ( ) = parenthesis indicate negative numbers, – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, mt = metric tons, NA = not applicable, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-44. KC-135/KC-46A Aircraft Operations at Clinton Sherman Industrial Airpark – Altus AFB KC-46A FTU Scenario**

Scenario/Operation	Operations/ Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
Existing KC-135 <sup>a</sup>									
Closed Pattern - IFR	1,062	12.0	2.0	–	1.0	212	35	–	18
Closed Pattern - VFR	434	5.0	2.0	–	1.0	36	14	–	7
Total TIMs - Existing KC-135						249	50	–	25
KC-46A - FTU <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	1,062	12.0	2.0	–	1.0	212	35	–	18
Closed Pattern - VFR	434	5.0	2.0	–	1.0	36	14	–	7
Total TIMs - KC-46A FTU						249	50	–	25

<sup>a</sup> Source is SAIC 2013d.

**Key:** – = No activity, % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, TIM = Time in Mode, VFR = visual flight rules.

**Table D.1-45. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Clinton Sherman Industrial Airpark – Altus AFB KC-46A FTU Scenario**

Scenario/Engine Setting	Annual Emissions - Tons										
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub> e (mt)
Existing KC-135											
55%	0.16	4.98	25.06	2.26	0.12	0.12	6,862	0.19	0.21	6,932	–
60%	0.03	0.91	5.79	0.49	0.03	0.03	1,494	0.04	0.05	1,509	–
Take-off	0.02	0.04	7.20	0.41	0.03	0.03	1,251	0.03	0.04	1,264	–
Subtotal Existing KC-135	0.21	5.92	38.04	3.17	0.17	0.17	9,607	0.27	0.30	9,705	
KC-46A - FTU											
55%	0.25	3.43	49.42	2.84	0.16	0.13	8,616	0.24	0.27	8,704	–
60%	0.05	0.68	11.59	0.62	0.04	0.03	1,891	0.05	0.06	1,911	–
Take-off	0.05	0.33	18.52	0.57	0.04	0.04	1,734	0.05	0.05	1,751	–
Subtotal KC-46A FTU	0.35	4.43	79.53	4.03	0.24	0.20	12,241	0.34	0.38	12,366	11,242

Scenario/Engine Setting	Annual Emissions - Tons										
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane	
Existing KC-135											
55%	–	–	0.004	–	–	0.001	0.004	0.002	–	–	
60%	–	–	0.001	–	–	0.000	0.001	0.000	–	–	
Take-off	–	–	0.000	–	–	-	0.000	0.000	–	–	
Subtotal Existing KC-135	–	–	0.005	–	–	0.001	0.005	0.002	–	–	
KC-46A - FTU											
55%	0.011	0.006	0.004	0.004	–	–	–	–	–	–	
60%	0.002	0.001	0.001	0.001	–	–	–	–	–	–	
Take-off	0.002	0.001	0.001	0.001	–	–	–	–	–	–	
Subtotal KC-46A FTU	0.015	0.009	0.006	0.006	–	–	–	–	–	–	

Scenario/Engine Setting	Annual Emissions - Tons										
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol	
Existing KC-135											
55%	–	0.006	0.001	0.023	–	–	0.101	–	–	–	
60%	–	0.001	0.000	0.005	–	–	0.022	–	–	–	
Take-off	–	0.001	-	0.003	–	–	0.001	–	–	–	
Subtotal Existing KC-135	–	0.008	0.001	0.030	–	–	0.124	–	–	–	
KC-46A - FTU											
55%	–	–	0.000	0.031	–	0.005	–	–	0.001	0.002	
60%	–	–	0.000	0.007	–	0.001	–	–	0.000	0.000	
Take-off	–	–	0.000	0.006	–	0.001	–	–	0.000	0.000	
Subtotal KC-46A FTU	–	–	0.001	0.044	–	0.006	–	–	0.002	0.003	

Scenario/Engine Setting	Annual Emissions - Tons										
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene	
Existing KC-135											
55%	–	–	–	–	0.004	0.009	0.001	0.007	0.002	–	
60%	–	–	–	–	0.001	0.002	0.000	0.001	0.000	–	
Take-off	–	–	–	–	0.000	0.000	0.000	0.001	0.000	–	
Subtotal Existing KC-135	–	–	–	–	0.005	0.011	0.001	0.009	0.003	–	
KC-46A - FTU											
55%	–	–	0.001	–	–	0.002	–	–	0.001	0.000	
60%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000	
Subtotal KC-46A FTU	–	–	0.001	–	–	0.002	–	–	0.001	0.001	

**Key:** – = Source does not emit particular pollutant, % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-46. KC-135/KC-46A Aircraft Operations at  
Rick Husband Amarillo International Airport – Altus AFB KC-46A FTU Scenario**

Scenario/ Operation	Operations per Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
<b>Existing KC-135<sup>a</sup></b>									
Closed Pattern - IFR	137	12.0	2.0	–	1.0	27	5	–	2
Closed Pattern - VFR	92	5.0	2.0	–	1.0	8	3	–	2
<b>Total TIMs - Existing KC-135</b>						<b>35</b>	<b>8</b>	<b>–</b>	<b>4</b>
<b>KC-46A - FTU<sup>a</sup></b>									
Closed Pattern - Radar & Initial to Overhead	137	12.0	2.0	–	1.0	27	5	–	2
Closed Pattern - VFR	92	5.0	2.0	–	1.0	8	3	–	2
<b>Total TIMs - KC-46A FTU</b>						<b>35</b>	<b>8</b>	<b>–</b>	<b>4</b>

<sup>a</sup> Source is SAIC 2013b.

**Key:** – = Source does not emit particular pollutant, % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, TIM = Time in Mode, VFR = visual flight rules.

**Table D.1-47. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Rick Husband Amarillo International Airport – Altus AFB KC-46A FTU Scenario**

Scenario/ Engine Setting	Annual Emissions - Tons										
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>	CO <sub>2e</sub> (mt)
<b>Existing KC-135</b>											
55%	0.02	0.70	3.54	0.32	0.02	0.02	969	0.03	0.03	979	–
60%	0.01	0.14	0.89	0.08	0.00	0.00	229	0.01	0.01	231	–
Take-off	0.00	0.01	1.10	0.06	0.00	0.00	192	0.01	0.01	193	–
<b>Subtotal Existing KC-135</b>	<b>0.03</b>	<b>0.85</b>	<b>5.53</b>	<b>0.46</b>	<b>0.02</b>	<b>0.02</b>	<b>1,390</b>	<b>0.04</b>	<b>0.04</b>	<b>1,404</b>	–
<b>KC-46A - FTU</b>											
55%	0.04	0.48	6.98	0.40	0.02	0.02	1,217	0.03	0.04	1,230	–
60%	0.01	0.10	1.77	0.10	0.01	0.00	290	0.01	0.01	292	–
Take-off	0.01	0.05	2.84	0.09	0.01	0.01	265	0.01	0.01	268	–
<b>Subtotal KC-46A FTU</b>	<b>0.05</b>	<b>0.64</b>	<b>11.59</b>	<b>0.58</b>	<b>0.03</b>	<b>0.03</b>	<b>1,772</b>	<b>0.05</b>	<b>0.06</b>	<b>1,790</b>	<b>1,627</b>
Scenario/ Engine Setting	Annual Emissions - Tons										
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane	
<b>Existing KC-135</b>											
55%	–	–	0.001	–	–	0.000	0.001	0.000	–	–	–
60%	–	–	0.000	–	–	0.000	0.000	0.000	–	–	–
Take-off	–	–	0.000	–	–	–	0.000	0.000	–	–	–
<b>Subtotal Existing KC-135</b>	–	–	<b>0.001</b>	–	–	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>	–	–	–
<b>KC-46A - FTU</b>											
55%	0.002	0.001	0.001	0.001	–	–	–	–	–	–	–
60%	0.000	0.000	0.000	0.000	–	–	–	–	–	–	–
Take-off	0.000	0.000	0.000	0.000	–	–	–	–	–	–	–
<b>Subtotal KC-46A FTU</b>	<b>0.002</b>	<b>0.001</b>	<b>0.001</b>	<b>0.001</b>	–	–	–	–	–	–	–
Scenario/ Engine Setting	Annual Emissions - Tons										
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphth- alene	Phenol	
<b>Existing KC-135</b>											
55%	–	0.001	0.000	0.003	–	–	0.014	–	–	–	–
60%	–	0.000	0.000	0.001	–	–	0.003	–	–	–	–
Take-off	–	0.000	–	0.000	–	–	0.000	–	–	–	–
<b>Subtotal Existing KC-135</b>	–	<b>0.001</b>	<b>0.000</b>	<b>0.004</b>	–	–	<b>0.018</b>	–	–	–	–
<b>KC-46A - FTU</b>											
55%	–	–	0.000	0.004	–	0.001	–	–	0.000	0.000	–
60%	–	–	0.000	0.001	–	0.000	–	–	0.000	0.000	–
Take-off	–	–	0.000	0.001	–	0.000	–	–	0.000	0.000	–
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.000</b>	<b>0.006</b>	–	<b>0.001</b>	–	–	<b>0.000</b>	<b>0.000</b>	–
Scenario/ Engine Setting	Annual Emissions - Tons										
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene	
<b>Existing KC-135</b>											
55%	–	–	–	–	0.001	0.001	0.000	0.001	0.000	–	–
60%	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–	–
Take-off	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–	–
<b>Subtotal Existing KC-135</b>	–	–	–	–	<b>0.001</b>	<b>0.002</b>	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>	–	–
<b>KC-46A - FTU</b>											
55%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
60%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.000</b>	–	–	<b>0.000</b>	–	–	<b>0.000</b>	<b>0.000</b>	–

**Key:** – = No activity, % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-48. KC-135/KC-46A Aircraft Operations at  
Lubbock Preston Smith International Airport – Altus AFB KC-46A FTU Scenario**

Scenario/ Operation	Operations /Year	Engine Setting/Time in Mode per Operation				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
<b>Existing KC-135<sup>a</sup></b>									
Closed Pattern - IFR	505	12.0	2.0	–	1.0	101	17	–	8
Closed Pattern - VFR	207	5.0	2.0	–	1.0	17	7	–	3
<b>Total TIMs - Existing KC-135</b>						<b>118</b>	<b>24</b>	<b>–</b>	<b>12</b>
<b>KC-46A - FTU<sup>a</sup></b>									
Closed Pattern - Radar & Initial to Overhead	316	12.0	2.0	–	1.0	63	11	–	5
Closed Pattern - VFR	129	5.0	2.0	–	1.0	11	4	–	2
<b>Total TIMs - KC-46A FTU</b>						<b>74</b>	<b>15</b>	<b>–</b>	<b>7</b>

<sup>a</sup> Assumes same number of ops as AFW, per SAIC 2013a.

**Key:** – = No activity, % = percent, AFW = Fort Worth Alliance Airport, FTU = Formal Training Unit, IFR = instrument flight rules, ops = operations, TIM = Time in Mode, VFR = visual flight rules.

**Table D.1-49. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Lubbock Preston Smith International Airport – Altus AFB KC-46A FTU Scenario**

Scenario/ Engine Setting	Annual Emissions - Tons										
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub> e (mt)
<b>Existing KC-135</b>											
55%	0.08	2.37	11.93	1.08	0.06	0.06	3,266	0.09	0.10	3,299	–
60%	0.02	0.43	2.75	0.23	0.01	0.01	711	0.02	0.02	718	–
Take-off	0.01	0.02	3.43	0.20	0.01	0.01	595	0.02	0.02	602	–
<b>Subtotal Existing KC-135</b>	<b>0.10</b>	<b>2.82</b>	<b>18.11</b>	<b>1.51</b>	<b>0.08</b>	<b>0.08</b>	<b>4,572</b>	<b>0.13</b>	<b>0.14</b>	<b>4,619</b>	<b>–</b>
<b>KC-46A - FTU</b>											
55%	0.07	1.02	14.70	0.84	0.05	0.04	2,563	0.07	0.08	2,589	–
60%	0.02	0.20	3.45	0.19	0.01	0.01	563	0.02	0.02	568	–
Take-off	0.01	0.10	5.51	0.17	0.01	0.01	516	0.01	0.02	521	–
<b>Subtotal KC-46A FTU</b>	<b>0.10</b>	<b>1.32</b>	<b>23.66</b>	<b>1.20</b>	<b>0.07</b>	<b>0.06</b>	<b>3,641</b>	<b>0.10</b>	<b>0.11</b>	<b>3,678</b>	<b>3,344</b>
Scenario/ Engine Setting	Annual Emissions - Tons										
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane	
<b>Existing KC-135</b>											
55%	–	–	0.002	–	–	0.000	0.002	0.001	–	–	–
60%	–	–	0.000	–	–	0.000	0.000	0.000	–	–	–
Take-off	–	–	0.000	–	–	–	0.000	0.000	–	–	–
<b>Subtotal Existing KC-135</b>	–	–	<b>0.003</b>	–	–	<b>0.001</b>	<b>0.002</b>	<b>0.001</b>	–	–	–
<b>KC-46A - FTU</b>											
55%	0.003	0.002	0.001	0.001	–	–	–	–	–	–	–
60%	0.001	0.000	0.000	0.000	–	–	–	–	–	–	–
Take-off	0.001	0.000	0.000	0.000	–	–	–	–	–	–	–
<b>Subtotal KC-46A FTU</b>	<b>0.005</b>	<b>0.003</b>	<b>0.002</b>	<b>0.002</b>	–	–	–	–	–	–	–
Scenario/ Engine Setting	Annual Emissions - Tons										
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphth- alene	Phenol	
<b>Existing KC-135</b>											
55%	–	0.003	0.000	0.011	–	–	0.048	–	–	–	–
60%	–	0.001	0.000	0.002	–	–	0.011	–	–	–	–
Take-off	–	0.000	–	0.001	–	–	0.000	–	–	–	–
<b>Subtotal Existing KC-135</b>	–	<b>0.004</b>	<b>0.000</b>	<b>0.014</b>	–	–	<b>0.059</b>	–	–	–	–
<b>KC-46A - FTU</b>											
55%	–	–	0.000	0.009	–	0.001	–	–	0.000	0.001	–
60%	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000	–
Take-off	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000	–
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.000</b>	<b>0.013</b>	–	<b>0.002</b>	–	–	<b>0.001</b>	<b>0.001</b>	–
Scenario/ Engine Setting	Annual Emissions - Tons										
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene	
<b>Existing KC-135</b>											
55%	–	–	–	–	0.002	0.004	0.000	0.003	0.001	–	–
60%	–	–	–	–	0.000	0.001	0.000	0.001	0.000	–	–
Take-off	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–	–
<b>Subtotal Existing KC-135</b>	–	–	–	–	<b>0.003</b>	<b>0.005</b>	<b>0.001</b>	<b>0.004</b>	<b>0.001</b>	–	–
<b>KC-46A - FTU</b>											
55%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
60%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000	–
<b>Subtotal KC-46A FTU</b>	–	–	<b>0.000</b>	–	–	<b>0.001</b>	–	–	<b>0.000</b>	<b>0.000</b>	–

**Key:** – = Source does not emit particular pollutant, % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-50. KC-135/KC-46A Aircraft Operations at Fort Worth Alliance Airport – Altus AFB KC-46A FTU Scenario**

Scenario/Operation	Operations Per Year	Engine Setting/Time in Mode per Operation				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
Existing KC-135 <sup>a</sup>									
Closed Pattern - IFR	505	12.0	2.0	–	1.0	101	17	–	8
Closed Pattern - VFR	207	5.0	2.0	–	1.0	17	7	–	3
Total TIMs - Existing KC-135						118	24	–	12
KC-46A - FTU <sup>b</sup>									
Closed Pattern - Radar & Initial to Overhead	316	12.0	2.0	–	1.0	63	11	–	5
Closed Pattern - VFR	129	5.0	2.0	–	1.0	11	4	–	2
Total TIMs - KC-46A FTU						74	15	–	7

<sup>a</sup> SAIC 2013e.<sup>b</sup> Assumes 37.5% fewer KC-46A ops, per SAIC 2013a.

**Key:** – = No activity, % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, ops = operations, TIM = Time in Mode, VFR = visual flight rules.

**Table D.1-51. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Fort Worth Alliance Airport – Altus AFB KC-46A FTU Scenario**

Scenario/ Engine Setting	Annual Emissions - Tons										
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	CO <sub>2</sub> e (mt)
Existing KC-135											
55%	0.08	2.37	11.93	1.08	0.06	0.06	3,266	0.09	0.10	3,299	–
60%	0.02	0.43	2.75	0.23	0.01	0.01	711	0.02	0.02	718	–
Take-off	0.01	0.02	3.43	0.20	0.01	0.01	595	0.02	0.02	602	–
Subtotal Existing KC-135	0.10	2.82	18.11	1.51	0.08	0.08	4,572	0.13	0.14	4,619	–
KC-46A - FTU											
55%	0.07	1.02	14.70	0.84	0.05	0.04	2,563	0.07	0.08	2,589	–
60%	0.02	0.20	3.45	0.19	0.01	0.01	563	0.02	0.02	568	–
Take-off	0.01	0.10	5.51	0.17	0.01	0.01	516	0.01	0.02	521	–
Subtotal KC-46A FTU	0.10	1.32	23.66	1.20	0.07	0.06	3,641	0.10	0.11	3,678	3,344
Scenario/ Engine Setting	Annual Emissions - Tons										
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	Dibutyl Phthalate	1,2- Dichloro- propane	
Existing KC-135											
55%	–	–	0.002	–	–	0.000	0.002	0.001	–	–	
60%	–	–	0.000	–	–	0.000	0.000	0.000	–	–	
Take-off	–	–	0.000	–	–	–	0.000	0.000	–	–	
Subtotal Existing KC-135	–	–	0.003	–	–	0.001	0.002	0.001	–	–	
KC-46A - FTU											
55%	0.003	0.002	0.001	0.001	–	–	–	–	–	–	
60%	0.001	0.000	0.000	0.000	–	–	–	–	–	–	
Take-off	0.001	0.000	0.000	0.000	–	–	–	–	–	–	
Subtotal KC-46A FTU	0.005	0.003	0.002	0.002	–	–	–	–	–	–	
Scenario/ Engine Setting	Annual Emissions - Tons										
	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphth- alene	Phenol	
Existing KC-135											
55%	–	0.003	0.000	0.011	–	–	0.048	–	–	–	
60%	–	0.001	0.000	0.002	–	–	0.011	–	–	–	
Take-off	–	0.000	-	0.001	–	–	0.000	–	–	–	
Subtotal Existing KC-135	–	0.004	0.000	0.014	–	–	0.059	–	–	–	
KC-46A - FTU											
55%	–	–	0.000	0.009	–	0.001	–	–	0.000	0.001	
60%	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000	
Take-off	–	–	0.000	0.002	–	0.000	–	–	0.000	0.000	
Subtotal KC-46A FTU	–	–	0.000	0.013	-	0.002	–	–	0.001	0.001	
Scenario/ Engine Setting	Annual Emissions - Tons										
	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene	1,1,1- Trichloro- ethane	Vinyl Acetate	mp- Xylene	o-Xylene	
Existing KC-135											
55%	–	–	–	–	0.002	0.004	0.000	0.003	0.001	–	
60%	–	–	–	–	0.000	0.001	0.000	0.001	0.000	–	
Take-off	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–	
Subtotal Existing KC-135	–	–	–	–	0.003	0.005	0.001	0.004	0.001	–	
KC-46A - FTU											
55%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	
60%	–	–	0.000	–	–	0.000	–	–	0.000	0.000	
Take-off	–	–	0.000	–	–	0.000	–	–	0.000	0.000	
Subtotal KC-46A FTU	–	–	0.000	–	–	0.001	–	–	0.000	0.000	

**Key:** – = Source does not emit particular pollutant, % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.1-52. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Altus AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
KC-46A Aircraft Operations	50.07	201.73	837.56	45.42	2.92	2.49	136,813	3.79	4.25	125,647
On-Wing Aircraft Engine Testing - KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,844	0.19	0.21	6,286
Aerospace Ground Support Equipment - KC-46A	0.21	1.51	1.70	0.07	0.25	0.23	1,848	0.29	0.00	1,686
C-17 Aircraft Operations	25.92	234.56	811.10	68.54	202.86	202.86	125,665	3.48	3.91	104,917
KC-135 Aircraft Operations	3.87	155.10	210.64	35.75	52.00	52.00	65,544	1.81	2.04	54,722
Transient Aircraft	1.38	5.07	3.15	0.31	0.77	0.77	577	0.02	0.02	530
On-Wing Aircraft Engine Testing - C-17	0.16	7.77	9.77	0.64	4.24	4.24	1,956	0.05	0.06	1,633
On-Wing Aircraft Engine Testing - KC-135	0.99	14.32	7.07	0.82	0.05	0.05	2,481	0.07	0.08	2,071
Aerospace Ground Support Equipment - Existing Aircraft	0.59	4.27	4.83	0.19	0.71	0.65	5,181	0.80	0.06	4,741
Government Motor Vehicles	0.10	1.01	2.19	0.01	0.12	0.10	723	0.00	0.00	657
Privately-Owned Vehicles - On-Base	0.16	8.90	1.12	0.03	0.10	0.05	1,684	0.00	0.00	1,531
Privately-Owned Vehicles - Off-Base	0.49	26.35	2.94	0.07	0.42	0.18	4,802	0.01	0.00	4,366
Nonroad Equipment	6.89	96.45	2.94	0.63	0.37	0.37	3,400	8.10	0.02	3,250
Mobile Fuel Transfer Operations	0.14	—	—	—	—	—	—	—	—	—
Point and Area Sources	2.84	8.73	14.38	0.26	1.56	0.70	—	—	—	—
<b>Total Proposed Emissions - 2016</b>	<b>108.19</b>	<b>815.32</b>	<b>1,938.34</b>	<b>155.06</b>	<b>266.59</b>	<b>264.88</b>	<b>357,518</b>	<b>18.61</b>	<b>10.65</b>	<b>312,037</b>
<b>Year 2012 Base Case Emissions</b>	<b>(55.39)</b>	<b>(573.25)</b>	<b>(1,069.38)</b>	<b>(106.96)</b>	<b>(262.74)</b>	<b>(261.86)</b>	<b>(208,787)</b>	<b>(11.67)</b>	<b>(6.17)</b>	<b>(191,769)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>52.80</b>	<b>242.07</b>	<b>868.96</b>	<b>48.10</b>	<b>3.85</b>	<b>3.01</b>	<b>148,731</b>	<b>6.93</b>	<b>4.47</b>	<b>120,269</b>
<b>Jackson County PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>				
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>0.95</b>	<b>0.42</b>	<b>0.81</b>	<b>0.45</b>	<b>0.01</b>	<b>0.01</b>	<b>0.71</b>	<b>0.59</b>	<b>0.72</b>	<b>0.63</b>

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Cumene	Dibutyl Phthalate
KC-46A Aircraft Operations	2.157	1.237	0.849	0.852	—	—	—	—	—	—
On-Wing Aircraft Engine Testing - KC-46A	0.620	0.356	0.244	0.245	—	—	—	—	—	—
Aerospace Ground Support Equipment - KC-46A	0.001	0.000	0.002	0.000	—	—	—	—	—	—
C-17 Aircraft Operations	0.094	—	0.199	—	0.007	—	0.036	0.005	—	—
KC-135 Aircraft Operations	—	—	0.050	—	—	0.006	0.078	0.032	—	—
Transient Aircraft	0.003	0.004	0.006	—	—	—	—	—	—	—
On-Wing Aircraft Engine Testing - C-17	0.004	—	0.008	—	0.000	—	0.001	0.000	—	—
On-Wing Aircraft Engine Testing - KC-135	—	—	0.001	—	—	0.000	0.001	0.001	—	—
Aerospace Ground Support Equipment - Existing Aircraft	0.001	0.000	0.006	0.001	—	—	—	—	—	—
Government Motor Vehicles	—	—	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - On-Base	—	—	—	—	—	—	—	—	—	—
Privately-Owned Vehicles - Off-Base	—	—	—	—	—	—	—	—	—	—
Nonroad Equipment	0.010	0.002	0.027	0.001	—	—	—	—	—	—
Mobile Fuel Transfer Operations	—	—	0.001	—	—	—	—	—	0.000	—
Point and Area Sources	—	—	—	—	—	—	—	—	—	—
<b>Total Proposed Emissions - 2016</b>	<b>2.891</b>	<b>1.598</b>	<b>1.394</b>	<b>1.099</b>	<b>0.007</b>	<b>0.006</b>	<b>0.116</b>	<b>0.037</b>	<b>0.000</b>	<b>—</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.114)</b>	<b>(0.006)</b>	<b>(0.307)</b>	<b>(0.002)</b>	<b>(0.007)</b>	<b>(0.006)</b>	<b>(0.116)</b>	<b>(0.037)</b>	<b>(0.000)</b>	<b>(0.020)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.777</b>	<b>1.592</b>	<b>1.087</b>	<b>1.097</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>0.000</b>	<b>(0.020)</b>
<b>Jackson County PSD Thresholds</b>										
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>24.37</b>	<b>279.90</b>	<b>3.54</b>	<b>523.57</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>—</b>	<b>0.49</b>	<b>(1.00)</b>

**Table D.1-52. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Altus AFB – Year 2016 (Continued)**

Source Type	Tons per Year										
	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
KC-46A Aircraft Operations	–	–	–	0.088	6.216	–	0.912	–	–	0.273	0.367
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	0.025	1.787	–	0.262	–	–	0.079	0.105
Aerospace Ground Support Equipment - KC-46A	–	–	–	0.001	0.001	0.000	–	–	0.005	0.000	–
C-17 Aircraft Operations	0.020	0.049	0.197	0.080	0.022	2.237	–	–	0.127	–	0.019
KC-135 Aircraft Operations	–	–	–	0.186	0.014	2.040	–	–	2.100	–	0.059
Transient Aircraft	–	–	–	–	0.001	0.021	–	–	–	–	0.002
On-Wing Aircraft Engine Testing - C-17	–	0.000	0.001	0.003	0.001	0.001	0.083	–	–	0.002	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	0.003	0.000	0.046	–	–	0.036	–
Aerospace Ground Support Equipment - Existing Aircraft	–	–	–	–	0.002	0.003	0.001	–	–	0.014	0.000
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–	–
Nonroad Equipment	–	–	–	0.010	0.021	0.005	–	–	0.076	–	–
Mobile Fuel Transfer Operations	–	–	–	0.000	–	0.000	–	–	0.001	0.000	–
Point and Area Sources	–	–	–	–	–	0.167	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.020</b>	<b>0.050</b>	<b>0.198</b>	<b>0.393</b>	<b>8.068</b>	<b>4.474</b>	<b>1.303</b>	<b>–</b>	<b>2.308</b>	<b>0.404</b>	<b>0.551</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.050)</b>	<b>(0.200)</b>	<b>(0.271)</b>	<b>(0.053)</b>	<b>(4.454)</b>	<b>(0.119)</b>	<b>–</b>	<b>(2.265)</b>	<b>(0.114)</b>	<b>(0.081)</b>	<b>(0.031)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>(0.030)</b>	<b>(0.150)</b>	<b>(0.073)</b>	<b>0.341</b>	<b>3.614</b>	<b>4.355</b>	<b>1.303</b>	<b>(2.265)</b>	<b>2.194</b>	<b>0.323</b>	<b>0.520</b>
<b>Jackson County PSD Thresholds</b>											
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>(0.60)</b>	<b>(0.75)</b>	<b>(0.27)</b>	<b>6.48</b>	<b>0.81</b>	<b>36.60</b>	<b>#DIV/0!</b>	<b>(1.00)</b>	<b>19.16</b>	<b>3.96</b>	<b>16.81</b>

Source Type	Tons per Year										
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-46A Aircraft Operations	–	–	0.156	–	–	0.324	–	–	–	0.143	0.084
On-Wing Aircraft Engine Testing - KC-46A	–	–	0.045	–	–	0.093	–	–	–	0.041	0.024
Aerospace Ground Support Equipment - KC-46A	0.000	0.000	0.000	–	–	0.003	–	–	–	–	0.002
C-17 Aircraft Operations	0.030	–	–	0.012	0.069	–	0.092	–	0.005	–	–
KC-135 Aircraft Operations	–	–	–	0.030	–	0.050	0.207	–	0.017	–	0.147
Transient Aircraft	–	–	–	0.001	–	–	0.003	–	–	–	–
On-Wing Aircraft Engine Testing - C-17	0.001	0.001	–	–	0.001	0.001	–	–	0.003	–	0.000
On-Wing Aircraft Engine Testing - KC-135	0.001	–	–	–	0.001	–	0.001	–	0.005	–	0.000
Aerospace Ground Support Equipment - Existing Aircraft	–	0.000	0.000	0.000	–	–	0.007	–	–	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–	–
Nonroad Equipment	0.000	0.195	0.000	–	–	0.035	–	–	–	–	0.033
Mobile Fuel Transfer Operations	–	–	–	–	–	0.002	–	0.000	–	–	0.002
Point and Area Sources	–	–	–	–	–	0.011	–	–	–	–	0.011
<b>Total Proposed Emissions - 2016</b>	<b>0.032</b>	<b>0.196</b>	<b>0.202</b>	<b>0.043</b>	<b>0.070</b>	<b>0.520</b>	<b>0.310</b>	<b>0.000</b>	<b>0.029</b>	<b>0.183</b>	<b>0.304</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.000)</b>	<b>(0.241)</b>	<b>(0.045)</b>	<b>(0.070)</b>	<b>(0.051)</b>	<b>(0.372)</b>	<b>(0.022)</b>	<b>(0.000)</b>	<b>(0.150)</b>	<b>(0.081)</b>	<b>(0.070)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.032</b>	<b>(0.045)</b>	<b>0.157</b>	<b>(0.027)</b>	<b>0.018</b>	<b>0.148</b>	<b>0.288</b>	<b>0.000</b>	<b>(0.121)</b>	<b>0.103</b>	<b>0.235</b>
<b>Jackson County PSD Thresholds</b>											
<b>Proposed Fractional Increase from Altus 2012 Emissions</b>	<b>89.80</b>	<b>(0.19)</b>	<b>3.51</b>	<b>(0.38)</b>	<b>0.36</b>	<b>0.40</b>	<b>12.94</b>	<b>0.49</b>	<b>(0.81)</b>	<b>1.27</b>	<b>3.37</b>

**Key:** ( ) = parenthesis indicate negative numbers, – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

## **D.2 FAIRCHILD AIR FORCE BASE REGIONAL CLIMATE**

Fairchild AFB has a semi-arid continental climate, characterized by pronounced variations in daily and seasonal temperatures and seasonal and annual precipitation. Meteorological data collected at Spokane International Airport and Fairchild AFB are used to describe the climate of the Fairchild AFB project region (WRCC 2013a, 2013b, 2013c).

**Temperature.** Temperatures at Fairchild AFB are relatively warm in the summer months and cold during the winter. The average high and low temperatures during the summer months at Spokane International Airport range from about 84 °F to 50 °F. The average high and low temperatures during the winter months range from 48 °F to 22 °F (WRCC 2013a).

**Precipitation.** Average annual precipitation at Fairchild AFB is 16.1 inches. Precipitation is greatest during the colder months of the year, and the peak monthly average of 2.2 inches occurs in December. Precipitation is at a minimum during the summer, as the lowest monthly average of 0.5 inches occurs in July. Snow is common during the coldest months of the year; the average annual snowfall is 42.0 inches (WRCC 2013a).

**Prevailing Winds.** Fairchild AFB experiences fairly breezy conditions, as the average wind speed for each month of the year is at least 8.3 miles per hour and the annual average wind speed is 9.4 miles per hour (WRCC 2013b). The colder months of the year have the windiest conditions, and the peak average monthly winds of 10.7 miles per hour occur in March. The wind prevails from the south-southwest direction for 11 months of the year at Fairchild AFB (WRCC 2013c).

## D.2.1 OPERATIONS EMISSION CALCULATIONS FOR THE KC-46A PROJECT SCENARIOS AT FAIRCHILD AFB

**Table D.2-1. Annual Air Operations for Aircraft at Altus AFB – Year 2008**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
C-17	17,052	35,092	0	35,092	87,236
KC-135	6,702	44,520	0	44,520	95,742
Transient	195	–	–	–	195

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** 2008 AEI (Weston Solutions, Inc. 2008).

**Table D.2-2. Annual Air Operations for Aircraft at Fairchild AFB – Year 2012**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
KC-135	1,474	–	–	5,983	7,457
UH-60	1,302	–	–	720	2,022
UH-1N	412	–	–	2,184	2,596
Transient	975	–	–	2,205	3,179
<b>Totals</b>	<b>4,162</b>	<b>–</b>	<b>–</b>	<b>11,091</b>	<b>15,253</b>

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** Table 2-11.

**Table D.2-3. Year 2012 Aircraft Closed Pattern Operations at Fairchild AFB – KC-46A Project Existing Conditions**

Aircraft Type/Operation	Operations/ Year	Engine Setting/Time in Mode (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
KC-135									
Closed Pattern - Radar & Initial to Overhead	2,782	12.0	2.0	—	1.0	556	93	—	46
Closed Pattern - VFR	1,890	5.0	2.0	—	1.0	157	63	—	31
Closed Pattern - Tactical	1,311	8.0	2.0	2.0	1.0	175	44	44	22
Total TIMs -						889	199	44	100
Transient <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	1,025	12.0	2.0	—	1.0	205	34	—	17
Closed Pattern - VFR	696	5.0	2.0	—	1.0	58	23	—	12
Closed Pattern - Tactical	483	8.0	2.0	2.0	1.0	64	16	16	8
Total TIMs -						327	73	16	37

<sup>a</sup> Engine setting TIMs assumed = KC-135 as they are large aircraft = C-17s and P-3Cs.

**Key:** – = No activity, % = percent, TIM = Time in Mode, VFR = visual flight rules.

**Table D.2-4. Emission Factors and Fuel Usages for Existing Aircraft Operations at Fairchild AFB**

Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
LTO											
KC-135	5,134	6.92	102.65	37.70	5.44	0.30	0.30	16,510	0.46	0.51	16,678
UH-60 <sup>a</sup>	661	1.40	12.30	3.40	0.30	2.30	2.30	3,000	0.08	0.09	3,031
UH-1N <sup>b</sup>	280	0.67	3.32	1.28	0.11	1.18	1.18	893	0.02	0.03	902
Closed Pattern											
KC-135 - Tactical	5,789	0.32	1.20	94.59	6.14	0.32	0.32	18,617	0.52	0.58	18,807
UH-60 <sup>c</sup>	343	0.19	1.89	2.27	0.14	1.44	1.44	1,106	0.03	0.03	1,117
UH-1N <sup>d</sup>	106	0.02	0.36	0.52	0.04	0.45	0.45	340	0.01	0.01	343
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloroform	Chloro- methane	o-Cresol	p-Cresol
LTO											
KC-135	5,134	—	—	0.010	—	—	0.001	0.011	0.004	—	—
UH-60 <sup>a</sup>	661	0.005	0.002	0.013	—	0.000	0.000	0.000	—	0.000	0.032
UH-1N <sup>b</sup>	280	0.002	0.001	0.006	—	0.000	0.000	0.000	—	0.000	0.014
Closed Pattern											
KC-135 - Tactical	5,789	—	—	0.004	—	—	0.002	0.009	0.004	—	—
UH-60 <sup>c</sup>	343	0.003	0.001	0.007	—	0.000	0.000	0.000	—	0.000	0.017
UH-1N <sup>d</sup>	106	0.001	0.000	0.002	—	0.000	0.000	0.000	—	0.000	0.005
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Dibenzo- furan	Dibutyl Phthalate	1,2- Dichloro- propane	2,4-Dinitro- phenol	Di(2- Ethylhexyl) Phthalate (DEHP)	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride
LTO											
KC-135	5,134	—	—	—	—	0.023	0.003	0.326	—	—	0.291
UH-60 <sup>a</sup>	661	0.000	0.000	—	—	0.001	0.001	0.060	—	—	0.005
UH-1N <sup>b</sup>	280	0.000	0.000	—	—	0.000	0.000	0.025	—	—	0.002
Closed Pattern											
KC-135 - Tactical	5,789	—	—	—	—	0.022	0.000	0.036	—	—	0.229
UH-60 <sup>c</sup>	343	0.000	0.000	—	—	0.000	0.000	0.031	—	—	0.003
UH-1N <sup>d</sup>	106	0.000	0.000	—	—	0.000	0.000	0.010	—	—	0.001
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		MIBK	MTBE	Naphth- alene	Phenol	POM	Propionald- ehyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetrachlor- oethene	Toluene
LTO											
KC-135	5,134	—	—	0.009	—	—	-	0.005	—	0.010	0.036
UH-60 <sup>a</sup>	661	0.000	—	0.002	0.002	—	-	0.001	0.000	—	0.004
UH-1N <sup>b</sup>	280	0.000	—	0.001	0.001	—	-	0.001	0.000	—	0.002
Closed Pattern											
KC-135 - Tactical	5,789	—	—	—	—	—	—	—	—	0.004	0.009
UH-60 <sup>c</sup>	343	0.000	—	0.001	0.001	—	—	0.001	0.000	—	0.002
UH-1N <sup>d</sup>	106	0.000	—	0.000	0.000	—	—	0.000	0.000	—	0.001
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		1,1,1- Trichloro- ethane	Trichloro- ethene	Vinyl Acetate	mp-Xylene	o-Xylene					
LTO											
KC-135	5,134	0.003	—	0.022	0.007	—					
UH-60 <sup>a</sup>	661	0.000	0.000	—	0.001	0.001					
UH-1N <sup>b</sup>	280	0.000	0.000	—	0.001	0.000					
Closed Pattern											
KC-135 - Tactical	5,789	0.001	—	0.015	0.003	—					
UH-60 <sup>c</sup>	343	0.000	0.000	—	0.001	0.000					
UH-1N <sup>d</sup>	106	0.000	0.000	—	0.000	0.000					

<sup>a</sup> Aircraft Emission Estimates: H-60 Landing and Takeoff Cycle and In-Frame, Maintenance Testing Using JP-5 (Aircraft Environmental Support Office – Fleet Readiness Center Southwest [AESO] 2009a).

<sup>b</sup> Aircraft Emission Estimates: HH/UH-1N Landing and Takeoff Cycle and Maintenance Testing Using JP-5 (AESO 2009b).

<sup>c</sup> GCA Box Pattern – Source: Aircraft Emission Estimates: H-60 Mission Operations Using JP-5 (AESO 2011).

<sup>d</sup> GCA Box Pattern – Source: Aircraft Emission Estimates: UH-1 and HH-1 Mission Operations Using JP-5 (AESO 2009c).

**Key:** — = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LTO = landing and takeoff, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-5. Annual Air Emissions from Year 2012 Aircraft Operations at Fairchild AFB  
Scenarios – KC-46A Project Scenario Existing Conditions**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	0.79	2.90	1.80	0.18	0.44	0.44	330	0.01	0.01	333
<b>Year 2012 - LTOs</b>										
KC-135 Aircraft Operations	5.10	75.65	27.79	4.01	0.22	0.22	12,168	0.34	0.38	12,292
UH-60	0.91	8.00	2.21	0.20	1.50	1.50	1,952	0.05	0.06	1,972
UH-1N	0.14	0.68	0.26	0.02	0.24	0.24	184	0.01	0.01	186
Transient Aircraft Operations	3.95	14.49	9.00	0.90	2.20	2.20	1,649	0.05	0.05	1,666
<b>Subtotal - Year 2012 LTOs</b>	<b>10.10</b>	<b>98.83</b>	<b>39.26</b>	<b>5.13</b>	<b>4.16</b>	<b>4.16</b>	<b>15,953</b>	<b>0.44</b>	<b>0.50</b>	<b>16,116</b>
<b>Closed Patterns</b>										
KC-135 - 55%	0.58	17.79	89.59	8.09	0.42	0.42	24,532	0.68	0.76	24,782
KC-135 - 60%	0.14	3.64	23.14	1.97	0.10	0.10	5,974	0.17	0.19	6,035
KC-135 - Climbout	0.03	0.05	9.07	0.60	0.03	0.03	1,823	0.05	0.06	1,842
KC-135 - Take-off	0.07	0.14	28.78	1.65	0.11	0.11	5,003	0.14	0.16	5,054
UH-60	0.07	0.68	0.82	0.05	0.52	0.52	398	0.01	0.01	402
UH-1N	0.02	0.39	0.57	0.04	0.49	0.49	371	0.01	0.01	375
Transient Aircraft Operations	0.30	7.97	55.49	4.53	0.24	0.24	13,757	0.38	0.43	13,897
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>1.22</b>	<b>30.65</b>	<b>207.45</b>	<b>16.93</b>	<b>1.92</b>	<b>1.92</b>	<b>51,858</b>	<b>1.44</b>	<b>1.61</b>	<b>52,388</b>
<b>Total Year 2012</b>	<b>11.31</b>	<b>129.49</b>	<b>246.71</b>	<b>22.06</b>	<b>6.08</b>	<b>6.08</b>	<b>67,811</b>	<b>1.88</b>	<b>2.11</b>	<b>68,504</b>
<b>Total KC-135 Aircraft Operations</b>	<b>5.92</b>	<b>97.27</b>	<b>178.37</b>	<b>16.32</b>	<b>0.89</b>	<b>0.89</b>	<b>49,500</b>	<b>1.37</b>	<b>1.54</b>	<b>50,006</b>
<b>Total UH-60</b>	<b>0.98</b>	<b>8.68</b>	<b>3.03</b>	<b>0.25</b>	<b>2.02</b>	<b>2.02</b>	<b>2,350</b>	<b>0.07</b>	<b>0.07</b>	<b>2,374</b>
<b>Total UH-1N</b>	<b>0.16</b>	<b>1.08</b>	<b>0.83</b>	<b>0.07</b>	<b>0.73</b>	<b>0.73</b>	<b>555</b>	<b>0.02</b>	<b>0.02</b>	<b>561</b>
<b>Total Transient Aircraft Operations</b>	<b>4.25</b>	<b>22.46</b>	<b>64.48</b>	<b>5.43</b>	<b>2.44</b>	<b>2.44</b>	<b>15,406</b>	<b>0.43</b>	<b>0.48</b>	<b>15,563</b>
Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	0.002	0.002	0.003	–	–	–	–	–	–	–
<b>Year 2012 - LTOs</b>										
KC-135 Aircraft Operations	–	–	0.007	–	–	0.001	0.008	0.003	–	–
UH-60	0.003	0.001	0.008	–	0.000	0.000	0.000	–	0.000	0.021
UH-1N	0.000	0.000	0.001	–	0.000	0.000	0.000	–	0.000	0.003
Transient Aircraft Operations	0.01	0.01	0.02	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 LTOs</b>	<b>0.013</b>	<b>0.012</b>	<b>0.034</b>	<b>–</b>	<b>0.000</b>	<b>0.001</b>	<b>0.008</b>	<b>0.003</b>	<b>0.000</b>	<b>0.024</b>
<b>Closed Patterns</b>										
KC-135 - 55%	–	–	0.015	–	–	0.004	0.014	0.006	–	–
KC-135 - 60%	–	–	0.003	–	–	0.001	0.003	0.002	–	–
KC-135 - Climbout	–	–	0.000	–	–	0.000	0.001	0.000	–	–
KC-135 - Take-off	–	–	0.002	–	–	–	0.002	0.001	–	–
UH-60	0.001	0.000	0.002	–	0.000	0.000	0.000	–	0.000	0.006
UH-1N	0.001	0.000	0.002	–	0.000	0.000	0.000	–	0.000	0.006
Transient Aircraft Operations	0.001	0.001	0.001	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.002</b>	<b>0.002</b>	<b>0.026</b>	<b>–</b>	<b>0.000</b>	<b>0.005</b>	<b>0.020</b>	<b>0.009</b>	<b>0.000</b>	<b>0.012</b>
<b>Total Year 2012</b>	<b>0.015</b>	<b>0.014</b>	<b>0.060</b>	<b>–</b>	<b>0.000</b>	<b>0.005</b>	<b>0.028</b>	<b>0.012</b>	<b>0.000</b>	<b>0.035</b>
<b>Total KC-135 Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>0.027</b>	<b>–</b>	<b>–</b>	<b>0.005</b>	<b>0.028</b>	<b>0.012</b>	<b>–</b>	<b>–</b>
<b>Total UH-60</b>	<b>0.004</b>	<b>0.002</b>	<b>0.011</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.000</b>	<b>0.027</b>
<b>Total UH-1N</b>	<b>0.001</b>	<b>0.001</b>	<b>0.003</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.000</b>	<b>0.008</b>
<b>Total Transient Aircraft Operations</b>	<b>0.010</b>	<b>0.012</b>	<b>0.018</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.2-5. Annual Air Emissions from Year 2012 Aircraft Operations at Fairchild AFB Scenarios – KC-46A Project Scenario Existing Conditions (Continued)**

Scenario/Source	Annual Emissions - Tons									
	Dibenzo-furan	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	Di(2-Ethylhexyl) Phthalate (DEHP)	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	–	–	–	–	–	0.000	0.012	–	–	–
<b>Year 2012 - LTOs</b>										
KC-135 Aircraft Operations	–	–	–	–	0.017	0.002	0.240	–	–	0.215
UH-60	0.000	0.000	–	–	0.000	0.000	0.039	–	–	0.003
UH-1N	0.000	0.000	–	–	0.000	0.000	0.005	–	–	0.000
Transient Aircraft Operations	–	–	–	–	–	0.00	0.06	–	–	–
<b>Subtotal - Year 2012 LTOs</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.017</b>	<b>0.004</b>	<b>0.344</b>	<b>–</b>	<b>–</b>	<b>0.218</b>
<b>Closed Patterns</b>										
KC-135 - 55%	–	–	–	–	0.022	0.002	0.082	–	–	0.361
KC-135 - 60%	–	–	–	–	0.006	0.000	0.018	–	–	0.089
KC-135 - Climbout	–	–	–	–	0.003	–	0.003	–	–	0.029
KC-135 - Take-off	–	–	–	–	0.003	–	0.011	–	–	0.003
UH-60	0.000	0.000	–	–	0.000	0.000	0.011	–	–	0.001
UH-1N	0.000	0.000	–	–	0.000	0.000	0.010	–	–	0.001
Transient Aircraft Operations	–	–	–	–	–	0.000	0.005	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.034</b>	<b>0.003</b>	<b>0.140</b>	<b>–</b>	<b>–</b>	<b>0.483</b>
<b>Total Year 2012</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.051</b>	<b>0.007</b>	<b>0.484</b>	<b>–</b>	<b>–</b>	<b>0.702</b>
<b>Total KC-135 Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.050</b>	<b>0.005</b>	<b>0.354</b>	<b>–</b>	<b>–</b>	<b>0.696</b>
<b>Total UH-60</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.001</b>	<b>0.050</b>	<b>–</b>	<b>–</b>	<b>0.004</b>
<b>Total UH-1N</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>	<b>0.016</b>	<b>–</b>	<b>–</b>	<b>0.001</b>
<b>Total Transient Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.002</b>	<b>0.065</b>	<b>–</b>	<b>–</b>	<b>–</b>
Scenario/Source	Annual Emissions - Tons									
	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	–	–	0.001	–	–	–	0.001	–	–	0.002
<b>Year 2012 - LTOs</b>										
KC-135 Aircraft Operations	–	–	0.007	–	–	–	0.004	–	0.007	0.026
UH-60	0.000	–	0.001	0.001	–	–	0.001	0.000	–	0.002
UH-1N	0.000	–	0.000	0.000	–	–	0.000	0.000	–	0.000
Transient Aircraft Operations	–	–	0.01	–	–	–	0.00	–	–	0.01
<b>Subtotal - Year 2012 LTOs</b>	<b>0.000</b>	<b>–</b>	<b>0.013</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.007</b>	<b>0.000</b>	<b>0.007</b>	<b>0.037</b>
<b>Closed Patterns</b>										
KC-135 - 55%	–	–	–	–	–	–	–	–	0.015	0.031
KC-135 - 60%	–	–	–	–	–	–	–	–	0.003	0.007
KC-135 - Climbout	–	–	–	–	–	–	–	–	0.000	0.001
KC-135 - Take-off	–	–	–	–	–	–	–	–	0.002	0.002
UH-60	0.000	–	0.000	0.000	–	–	0.000	0.000	–	0.001
UH-1N	0.000	–	0.000	0.000	–	–	0.000	0.000	–	0.001
Transient Aircraft Operations	–	–	0.000	–	–	–	0.000	–	–	0.001
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.000</b>	<b>–</b>	<b>0.001</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.000</b>	<b>0.020</b>	<b>0.042</b>
<b>Total Year 2012</b>	<b>0.000</b>	<b>–</b>	<b>0.014</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>0.008</b>	<b>0.000</b>	<b>0.027</b>	<b>0.079</b>
<b>Total KC-135 Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>0.007</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.004</b>	<b>–</b>	<b>0.027</b>	<b>0.066</b>
<b>Total UH-60</b>	<b>0.000</b>	<b>–</b>	<b>0.002</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.000</b>	<b>–</b>	<b>0.003</b>
<b>Total UH-1N</b>	<b>0.000</b>	<b>–</b>	<b>0.001</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.001</b>
<b>Total Transient Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>0.005</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.003</b>	<b>–</b>	<b>–</b>	<b>0.009</b>

**Table D.2-5. Annual Air Emissions from Year 2012 Aircraft Operations at Fairchild AFB Scenarios – KC-46A Project Scenario Existing Conditions (Continued)**

Scenario/Source	Annual Emissions - Tons				
	1,1,1-Trichloro-ethane	Trichloro-ethene	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Altus AFB - Year 2008</b>					
Transient Aircraft Operations	–	–	–	–	–
<b>Year 2012 - LTOs</b>					
KC-135 Aircraft Operations	0.002	–	0.016	0.005	–
UH-60	0.000	0.000	–	0.001	0.001
UH-1N	0.000	0.000	–	0.000	0.000
Transient Aircraft Operations	–	–	–	–	–
<b>Subtotal - Year 2012 LTOs</b>	<b>0.003</b>	<b>0.000</b>	<b>0.016</b>	<b>0.006</b>	<b>0.001</b>
<b>Closed Patterns</b>					
KC-135 - 55%	0.003	–	0.025	0.009	–
KC-135 - 60%	0.001	–	0.006	0.002	–
KC-135 - Climbout	–	–	0.001	0.000	–
KC-135 - Take-off	0.000	–	0.004	0.001	–
UH-60	0.000	0.000	–	0.000	0.000
UH-1N	0.000	0.000	–	0.000	0.000
Transient Aircraft Operations	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.005</b>	<b>0.000</b>	<b>0.036</b>	<b>0.012</b>	<b>0.000</b>
<b>Total Year 2012</b>	<b>0.007</b>	<b>0.000</b>	<b>0.052</b>	<b>0.018</b>	<b>0.001</b>
<b>Total KC-135 Aircraft Operations</b>	<b>0.007</b>	<b>–</b>	<b>0.052</b>	<b>0.017</b>	<b>–</b>
<b>Total UH-60</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.001</b>	<b>0.001</b>
<b>Total UH-1N</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>
<b>Total Transient Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Key:** – = Source does not emit particular pollutant, % = percent, AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LTO = landing and takeoff, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-6. Year 2012 AGE Usages – Fairchild AFB**

Source	Hp	Load Factor	Annual Hours	Annual HP-Hrs
Floodlight (FL-1D & NF2D & lightcart)	10.5	0.74	4,320	33,566
MC-2A Air Compressor	10.5	0.48	108	544
Jacking Manifold	24.0	0.51	120	1,469
MC-7 Air Compressor	48.0	0.48	25	576
SGNSC	49.0	0.51	286	7,147
MC20 Air Compressor	50.0	1.00	42	2,100
<b>Subtotal - 10-50 Hp</b>				<b>45,403</b>
Generator, A/M32A-60A	80.4	0.95	5	382
Generator Set (Power Unit) - 86/B809	105.9	0.95	18,480	1,858,478
Air Conditioners, MA-3D	120.0	0.28	25	840
A/M32A-95 LASS Air Cart	127.3	0.95	168	20,317
Next Generation Heater (NGH)	154.1	0.95	918	134,391
<b>Subtotal - 100-175 Hp</b>				<b>2,014,026</b>
Hyd Test Stand, (KC-135)	195.0	0.51	66	6,564
Hyd Test Stand, Helicopter	195.0	0.51	16	1,591
<b>Subtotal - 176-300 Hp</b>				<b>8,155</b>

**Key:** Hp = horsepower, Hr = hour, NGH = Next Generation Heater, SGNSC = Self-Generating Nitrogen Servicing Cart.

**Source:** SAIC 2013g.

**Table D.2-7. Year 2012 Average Nonroad Equipment Emission Factors – Fairchild AFB**

Hp Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>Year 2012</b>										
Nonroad Equipment - 25-40 Hp	0.70	3.43	4.87	0.13	0.50	0.46	608.97	0.094	0.007	613
Nonroad Equipment - 41-50 Hp	0.50	2.56	4.93	0.13	0.45	0.41	609.60	0.094	0.007	614
Nonroad Equipment - 51-75 Hp	0.48	2.52	4.90	0.13	0.44	0.40	610.89	0.094	0.007	615
Nonroad Equipment - 76-100 Hp	0.52	3.68	4.61	0.13	0.53	0.49	607.38	0.094	0.007	611
Nonroad Equipment - 101-175 Hp	0.54	3.92	4.58	0.13	0.61	0.56	607.97	0.094	0.007	612
Nonroad Equipment - 176-300 Hp	0.38	1.72	4.09	0.11	0.38	0.35	546.53	0.094	0.007	551
Hp Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2012</b>										
Nonroad Equipment - 25-40 Hp	0.052	0.008	0.014	0.001	–	–	–	–	–	–
Nonroad Equipment - 41-50 Hp	0.037	0.006	0.010	0.001	–	–	–	–	–	–
Nonroad Equipment - 51-75 Hp	0.036	0.006	0.010	0.001	–	–	–	–	–	–
Nonroad Equipment - 76-100 Hp	0.039	0.006	0.011	0.001	–	–	–	–	–	–
Nonroad Equipment - 101-175 Hp	0.040	0.006	0.011	0.001	–	–	–	–	–	–
Nonroad Equipment - 176-300 Hp	0.028	0.004	0.008	0.001	–	–	–	–	–	–
Hp Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2012</b>										
Nonroad Equipment - 25-40 Hp	–	–	0.002	0.105	0.001	–	–	–	–	–
Nonroad Equipment - 41-50 Hp	–	–	0.002	0.075	0.001	–	–	–	–	–
Nonroad Equipment - 51-75 Hp	–	–	0.001	0.072	0.001	–	–	–	–	–
Nonroad Equipment - 76-100 Hp	–	–	0.002	0.078	0.001	–	–	–	–	–
Nonroad Equipment - 101-175 Hp	–	–	0.002	0.081	0.001	–	–	–	–	–
Nonroad Equipment - 176-300 Hp	–	–	0.001	0.057	0.001	–	–	–	–	–
Hp Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012</b>										
Nonroad Equipment - 25-40 Hp	0.000	0.007	0.000	–	–	0.011	–	–	–	0.007
Nonroad Equipment - 41-50 Hp	0.000	0.005	0.000	–	–	0.008	–	–	–	0.005
Nonroad Equipment - 51-75 Hp	0.000	0.005	0.000	–	–	0.007	–	–	–	0.005
Nonroad Equipment - 76-100 Hp	0.000	0.005	0.000	–	–	0.008	–	–	–	0.006
Nonroad Equipment - 101-175 Hp	0.000	0.005	0.000	–	–	0.008	–	–	–	0.006
Nonroad Equipment - 176-300 Hp	0.000	0.004	0.000	–	–	0.006	–	–	–	0.004

<sup>a</sup> Year 2012 factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Spokane County, Washington.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, EPA = Environmental Protection Agency, Hp = horsepower, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-8. Annual Air Emissions for AGE Usages from Existing Aircraft at Fairchild AFB – KC-46A Project Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
10-50 Hp	0.04	0.17	0.24	0.01	0.03	0.02	30	0.00	0.00	31
76-100 Hp	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0
101-175 Hp	1.20	8.70	10.17	0.29	1.35	1.25	1,350	0.21	0.01	1,359
176-300 Hp	0.00	0.02	0.04	0.00	0.00	0.00	5	0.00	0.00	5
<b>Subtotal - Year 2012</b>	<b>1.24</b>	<b>8.89</b>	<b>10.45</b>	<b>0.30</b>	<b>1.38</b>	<b>1.27</b>	<b>1,385</b>	<b>0.21</b>	<b>0.02</b>	<b>1,395</b>
<b>Year 2016</b>										
<b>Subtotal - Year 2016<sup>a</sup></b>	<b>0.56</b>	<b>4.03</b>	<b>4.58</b>	<b>0.18</b>	<b>0.67</b>	<b>0.62</b>	<b>895</b>	<b>0.14</b>	<b>0.01</b>	<b>901</b>

Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2012</b>										
10-50 Hp	0.003	0.000	0.001	0.000	–	–	–	–	–	–
76-100 Hp	0.000	0.000	0.000	0.000	–	–	–	–	–	–
101-175 Hp	0.089	0.014	0.024	0.002	–	–	–	–	–	–
176-300 Hp	0.000	0.000	0.000	0.000	–	–	–	–	–	–
<b>Subtotal - Year 2012</b>	<b>0.092</b>	<b>0.014</b>	<b>0.025</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016</b>										
<b>Subtotal - Year 2016<sup>a</sup></b>	<b>0.04</b>	<b>0.01</b>	<b>0.01</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

Scenario/Source	Annual Emissions - Tons									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2012</b>										
10-50 Hp	–	–	0.000	0.005	0.000	–	–	–	–	–
76-100 Hp	–	–	0.000	0.000	0.000	–	–	–	–	–
101-175 Hp	–	–	0.004	0.179	0.002	–	–	–	–	–
176-300 Hp	–	–	0.000	0.001	0.000	–	–	–	–	–
<b>Subtotal - Year 2012</b>	<b>–</b>	<b>–</b>	<b>0.004</b>	<b>0.185</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016</b>										
<b>Subtotal - Year 2016<sup>a</sup></b>	<b>–</b>	<b>–</b>	<b>0.002</b>	<b>0.08</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

Scenario/Source	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012</b>										
10-50 Hp	0.000	0.000	0.000	–	–	0.001	–	–	–	0.000
76-100 Hp	0.000	0.000	0.000	–	–	0.000	–	–	–	0.000
101-175 Hp	0.000	0.012	0.001	–	–	0.018	–	–	–	0.013
176-300 Hp	0.000	0.000	0.000	–	–	0.000	–	–	–	0.000
<b>Subtotal - Year 2012</b>	<b>0.000</b>	<b>0.012</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.019</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.013</b>
<b>Year 2016</b>										
<b>Subtotal - Year 2016<sup>a</sup></b>	<b>0.000</b>	<b>0.01</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.01</b>

<sup>a</sup> 2012 AGE emissions \* (2016 existing aircraft LTOs / 2012 total existing LTOs) \* (2016/2012 Nonroad EFs).

**Key:** – = Source does not emit particular pollutant, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EFs = emission factors, Hp = horsepower, LTO = landing and takeoff, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-9. Existing Aircraft On-Wing Engine Testing Activity Data for  
Altus AFB – Year 2012**

Aircraft/Test Type	Tests/ Year <sup>a</sup>	# of Engines	Duration (Minutes) <sup>a</sup>	Engine Setting/Annual Engine Hours			
				Idle	Approach	Intermediate	Takeoff
KC-135							
60-HR INSPECTION	66	4	15	66.0	—	—	—
120-HR INSPECTION	66	4	15	66.0	—	—	—
Idle runs for maintenance	130	1	15	32.5	—	—	—
Idle runs for maintenance	104	2	15	52.0	—	—	—
Idle runs for maintenance	26	4	15	26.0	—	—	—
141 ARW EXPO SORTIE PREFLIGHT	445	4	10	296.4	—	—	—
141 ARW EXPO SORTIE POST-FLIGHT	445	4	6	177.8	—	—	—
DEFUELING	66	1	60	66.0	—	—	—
PREFLIGHT	1,027	4	10	684.7	—	—	—
POSTFLIGHT	1,027	2	5	171.2	—	—	—
HIGH POWER ENGINE RUNS	80	2	90	240.0	—	—	—
HIGH POWER ENGINE RUNS	80	2	15	—	40.0	—	—
HIGH POWER ENGINE RUNS	80	2	30	—	—	80.0	—
HIGH POWER ENGINE RUNS	80	2	15	—	—	—	40.0
Total Time In Modes - KC-135				1,879	40	80	40
UH-1M							
36 RQF UH-1N MX	30	2	30	30.0	—	—	—
36 RQF UH-1N Hovers - All	412	2	16	219.7	—	—	—
Total Time In Modes - KC-135				250	—	—	—
UH-60							
ARNG H-60 Preflight Hover	1,302	2	2	86.8	—	—	—
ARNG H-60 Hovers	66	2	15	33.0	—	—	—
ARNG H-60 MX PROCEDURE	78	2	35	91.0	—	—	—
Total Time In Modes - KC-135				211	—	—	—

<sup>a</sup> Source is SAIC 2013i.**Key:** – = Source does not emit particular pollutant, # = number, ARNG = Air National Guard, ARW = Air Refueling Wing, hr = hour.

**Table D.2-10. Emissions Factors by Engine Setting for Aircraft at  
Fairchild AFB – KC-46A MOB 1 Scenario**

Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	2.10	30.70	4.00	1.06	0.06	0.06	3,216	0.09	0.10	3,249
Approach	2,463	0.09	4.20	8.20	1.06	0.06	0.06	3,216	0.09	0.10	3,249
Intermediate	6,486	0.06	0.09	16.00	1.06	0.05	0.05	3,216	0.09	0.10	3,249
Military	7,801	0.05	0.09	18.50	1.06	0.07	0.07	3,216	0.09	0.10	3,249
T400-CP-400 <sup>c</sup>											
Warm-up	148	6.21	28.36	3.13	0.40	4.20	4.20	3,216	0.09	0.10	3,249
T700-GE-700 <sup>d</sup>											
Taxi Out	308	0.66	16.01	4.85	0.40	4.20	4.20	3,216	0.09	0.10	3,249
P&W 4062 <sup>e</sup>											
Idle	1,663	12.49	42.61	3.78	1.06	0.11	0.10	3,216	0.09	0.10	3,249
Approach	5,702	0.10	1.93	12.17	1.06	0.05	0.04	3,216	0.09	0.10	3,249
Intermediate	16,870	0.08	0.50	25.98	1.06	0.07	0.06	3,216	0.09	0.10	3,249
Military	21,622	0.09	0.61	34.36	1.06	0.08	0.07	3,216	0.09	0.10	3,249
KC-46A APU - Honeywell 331-400C <sup>f</sup>											
Pounds per Hour	N/A	0.04	0.33	6.72	0.56	0.05	0.04	1,373	0.04	0.04	1,387
Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	–	–	0.002	–	–	–	0.002	0.001	–	–
Approach	2,463	–	–	0.003	–	–	0.001	0.002	0.001	–	–
Intermediate	6,486	–	–	0.000	–	–	0.000	0.002	0.001	–	–
Military	7,801	–	–	0.001	–	–	–	0.001	0.000	–	–
T400-CP-400 <sup>c</sup>											
Warm-up	148	0.018	0.007	0.049	–	0.000	0.000	0.001	–	0.001	0.121
T700-GE-700 <sup>d</sup>											
Taxi Out	308	0.018	0.007	0.049	–	0.000	0.000	0.001	–	0.001	0.121
P&W 4062 <sup>e</sup>											
Idle	1,663	–	–	–	–	–	–	–	–	–	–
Approach	5,702	–	–	–	–	–	–	–	–	–	–
Intermediate	16,870	–	–	–	–	–	–	–	–	–	–
Military	21,622	–	–	–	–	–	–	–	–	–	–
KC-46A APU - Honeywell 331-400C <sup>f</sup>											
Pounds per Hour	N/A	–	–	–	–	–	–	–	–	–	–
Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	Di(2-Ethylhexyl) Phthalate (DEHP)	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	–	–	–	–	0.006	0.001	0.095	–	–	0.068
Approach	2,463	–	–	–	–	0.002	0.001	0.015	–	–	0.045
Intermediate	6,486	–	–	–	–	0.005	–	0.006	–	–	0.051
Military	7,801	–	–	–	–	0.002	–	0.007	–	–	0.002
T400-CP-400 <sup>c</sup>											
Warm-up	148	0.000	0.000	–	–	0.001	0.002	0.219	–	–	0.011
T700-GE-700 <sup>d</sup>											
Taxi Out	308	0.000	0.000	–	–	0.001	0.002	0.219	–	–	0.011
P&W 4062 <sup>e</sup>											
Idle	1,663	–	–	–	–	–	–	–	–	–	–
Approach	5,702	–	–	–	–	–	–	–	–	–	–
Intermediate	16,870	–	–	–	–	–	–	–	–	–	–
Military	21,622	–	–	–	–	–	–	–	–	–	–
KC-46A APU - Honeywell 331-400C <sup>f</sup>											
Pounds per Hour	N/A	–	–	–	–	–	–	–	–	–	–

**Table D.2-10. Emissions Factors by Engine Setting for Aircraft at Fairchild AFB – KC-46A MOB 1 Scenario (Continued)**

Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		MIBK	MTBE	Naphth- alene	Phenol	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene
CFM56-2B-1 <sup>b</sup>											
Idle	1,014	—	—	0.003	—	—	—	0.001	—	0.002	0.009
Approach	2,463	—	—	—	—	—	—	—	—	0.003	0.006
Intermediate	6,486	—	—	—	—	—	—	—	—	0.000	0.001
Military	7,801	—	—	—	—	—	—	—	—	0.001	0.001
T400-CP-400 <sup>c</sup>											
Warm-up	148	0.001	—	0.007	0.006	—	—	0.005	—	—	0.013
T700-GE-700 <sup>d</sup>											
Taxi Out	308	0.001	—	0.007	0.006	—	—	0.005	—	—	0.013
P&W 4062 <sup>e</sup>											
Idle	1,663	—	—	—	—	—	—	—	—	—	—
Approach	5,702	—	—	—	—	—	—	—	—	—	—
Intermediate	16,870	—	—	—	—	—	—	—	—	—	—
Military	21,622	—	—	—	—	—	—	—	—	—	—
KC-46A APU - Honeywell 331-400C <sup>f</sup>											
Pounds per Hour	N/A	—	—	—	—	—	—	—	—	—	—

Engine/Setting	Fuel Flow (pounds/hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>				
		1,1,1- Trichloroet hane	Trichloro- ethene	Vinyl Acetate	mp-Xylene	o-Xylene
CFM56-2B-1 <sup>b</sup>						
Idle	1,014	0.001	—	0.005	0.002	—
Approach	2,463	0.001	—	0.004	0.002	—
Intermediate	6,486	-	—	0.003	0.001	—
Military	7,801	0.000	—	0.002	0.000	—
T400-CP-400 <sup>c</sup>						
Warm-up	148	0.001	—	—	0.004	0.003
T700-GE-700 <sup>d</sup>						
Taxi Out	308	0.001	—	—	0.004	0.003
P&W 4062 <sup>e</sup>						
Idle	1,663	—	—	—	—	—
Approach	5,702	—	—	—	—	—
Intermediate	16,870	—	—	—	—	—
Military	21,622	—	—	—	—	—
KC-46A APU - Honeywell 331-400C <sup>f</sup>						
Pounds per Hour	N/A	—	—	—	—	—

<sup>a</sup> Data are for 1 engine.<sup>b</sup> Data from Air Emissions Factor Guide to Air Force Mobile Sources (AFCEC 2013), except military data for the F117 engine from (AFCEE 2009).<sup>c</sup> The UH-1 has two T400-CP-400 engines (AESO 2009c).<sup>d</sup> The UH-60 has two T700-GE-700 engines (AESO 2011).<sup>e</sup> ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – (ICAO 2013).<sup>f</sup> Source is Boeing 2013a.

**Key:** APU = auxiliary power unit, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, hr = hour, ICAO = International Civil Aviation Organization, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, P&W = Pratt & Whitney, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-11. Annual Air Emissions from Existing Aircraft On-Wing Engine Testing Activities for Altus AFB – Year 2012**

Scenario/ Engine Type	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
KC-135										
Idle	2.00	29.23	3.81	1.01	0.06	0.06	3,062	0.08	0.10	3,094
Approach	0.00	0.21	0.40	0.05	0.00	0.00	158	0.00	0.00	160
Intermediate	0.01	0.02	4.15	0.28	0.01	0.01	834	0.02	0.03	843
Military	0.01	0.01	2.89	0.17	0.01	0.01	502	0.01	0.02	507
Subtotal KC-135	2.03	29.48	11.25	1.50	0.08	0.08	4,557	0.13	0.14	4,604
UH-1M										
Warm-up	0.11	0.52	0.06	0.01	0.08	0.08	59	0.00	0.00	60
Subtotal KC-135	0.11	0.52	0.06	0.01	0.08	0.08	59	0.00	0.00	60
UH-60										
Taxi Out	0.02	0.52	0.16	0.01	0.14	0.14	104	0.00	0.00	105
Subtotal KC-135	0.02	0.52	0.16	0.01	0.14	0.14	104	0.00	0.00	105
Total Emissions - 2012	2.17	30.52	11.47	1.52	0.30	0.30	4,721	0.13	0.15	4,769

Scenario/ Engine Type	Annual Emissions - Tons							
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	
KC-135								
Idle	–	–	0.002	–	–	–	0.002	
Approach	–	–	0.000	–	–	0.000	0.000	
Intermediate	–	–	0.000	–	–	0.000	0.000	
Military	–	–	0.000	–	–	–	0.000	
Subtotal KC-135	–	–	0.002	–	–	0.000	0.003	
UH-1M								
Warm-up	0.000	0.000	0.001	–	0.000	0.000	0.000	
Subtotal KC-135	0.000	0.000	0.001	–	0.000	0.000	0.000	
UH-60								
Taxi Out	0.001	0.000	0.002	–	0.000	0.000	0.000	
Subtotal KC-135	0.001	0.000	0.002	–	0.000	0.000	0.000	
Total Emissions - 2012	0.001	0.000	0.005	–	0.000	0.000	0.003	

Scenario/ Engine Type	Annual Emissions - Tons						
	Chloro-methane	o-Cresol	p-Cresol	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloro-propane	2,4-Dinitro-phenol
KC-135							
Idle	0.001	–	–	–	–	–	–
Approach	0.000	–	–	–	–	–	–
Intermediate	0.000	–	–	–	–	–	–
Military	0.000	–	–	–	–	–	–
Subtotal KC-135	0.001	–	–	–	–	–	–
UH-1M							
Warm-up	–	0.000	0.002	0.000	0.000	–	–
Subtotal KC-135	–	0.000	0.002	0.000	0.000	–	–
UH-60							
Taxi Out	–	0.000	0.004	0.000	0.000	–	–
Subtotal KC-135	–	0.000	0.004	0.000	0.000	–	–
Total Emissions - 2012	0.001	0.000	0.006	0.000	0.000	–	–

**Table D.2-11. Annual Air Emissions from Existing Aircraft On-Wing Engine Testing Activities for Altus AFB – Year 2012 (Continued)**

Scenario/ Engine Type	Annual Emissions - Tons						
	<i>Di(2-Ethylhexyl) Phthalate (DEHP)</i>	<i>Ethyl- benzene</i>	<i>Formalde- hyde</i>	<i>Hexane</i>	<i>Methanol</i>	<i>Methylene Chloride</i>	<i>MIBK</i>
<b>KC-135</b>							
Idle	0.005	0.001	0.091	–	–	0.064	–
Approach	0.000	0.000	0.001	–	–	0.002	–
Intermediate	0.001	–	0.001	–	–	0.013	–
Military	0.000	–	0.001	–	–	0.000	–
<b>Subtotal KC-135</b>	<b>0.007</b>	<b>0.001</b>	<b>0.094</b>	–	–	<b>0.080</b>	–
<b>UH-1M</b>							
Warm-up	0.000	0.000	0.004	–	–	0.000	0.000
<b>Subtotal KC-135</b>	<b>0.000</b>	<b>0.000</b>	<b>0.004</b>	–	–	<b>0.000</b>	<b>0.000</b>
<b>UH-60</b>							
Taxi Out	0.000	0.000	0.007	–	–	0.000	0.000
<b>Subtotal KC-135</b>	<b>0.000</b>	<b>0.000</b>	<b>0.007</b>	–	–	<b>0.000</b>	<b>0.000</b>
<b>Total Emissions - 2012</b>	<b>0.007</b>	<b>0.001</b>	<b>0.105</b>	–	–	<b>0.080</b>	<b>0.000</b>
Scenario/ Engine Type	Annual Emissions - Tons						
	<i>MTBE</i>	<i>Naphthalene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propionalde- hyde</i>	<i>Styrene</i>	<i>1,1,2,2- Tetrachloro- ethane</i>
<b>KC-135</b>							
Idle	–	0.003	–	–	–	0.001	–
Approach	–	–	–	–	–	–	–
Intermediate	–	–	–	–	–	–	–
Military	–	–	–	–	–	–	–
<b>Subtotal KC-135</b>	–	<b>0.003</b>	–	–	–	<b>0.001</b>	–
<b>UH-1M</b>							
Warm-up	–	0.000	0.000	–	–	0.000	–
<b>Subtotal KC-135</b>	–	<b>0.000</b>	<b>0.000</b>	–	–	<b>0.000</b>	–
<b>UH-60</b>							
Taxi Out	–	0.000	0.000	–	–	0.000	–
<b>Subtotal KC-135</b>	–	<b>0.000</b>	<b>0.000</b>	–	–	<b>0.000</b>	–
<b>Total Emissions - 2012</b>	–	<b>0.003</b>	<b>0.000</b>	–	–	<b>0.002</b>	–
Scenario/ Engine Type	Annual Emissions - Tons						
	<i>Tetrachloro- ethene</i>	<i>Toluene</i>	<i>1,1,1- Trichloro- ethane</i>	<i>Trichloro- ethene</i>	<i>Vinyl Acetate</i>	<i>mp-Xylene</i>	<i>o-Xylene</i>
<b>KC-135</b>							
Idle	0.002	0.009	0.001	–	0.005	0.002	–
Approach	0.000	0.000	0.000	–	0.000	0.000	–
Intermediate	0.000	0.000	–	–	0.001	0.000	–
Military	0.000	0.000	0.000	–	0.000	0.000	–
<b>Subtotal KC-135</b>	<b>0.002</b>	<b>0.009</b>	<b>0.001</b>	–	<b>0.006</b>	<b>0.002</b>	–
<b>UH-1M</b>							
Warm-up	–	0.000	0.000	–	–	0.000	0.000
<b>Subtotal KC-135</b>	–	<b>0.000</b>	<b>0.000</b>	–	–	<b>0.000</b>	<b>0.000</b>
<b>UH-60</b>							
Taxi Out	–	0.000	0.000	–	–	0.000	0.000
<b>Subtotal KC-135</b>	–	<b>0.000</b>	<b>0.000</b>	–	–	<b>0.000</b>	<b>0.000</b>
<b>Total Emissions - 2012</b>	<b>0.002</b>	<b>0.010</b>	<b>0.001</b>	–	<b>0.006</b>	<b>0.002</b>	<b>0.000</b>

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-12. KC-46A Aircraft Landings and Take-offs at  
Fairchild AFB – KC-46A MOB 1 Scenario**

Scenario/Operation	Operations per Year <sup>a</sup>	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		Idle	Approach	Intermediate	Takeoff	Idle	Approach	Intermediate	Takeoff
KC-46A - MOB 1									
LTO	2,815	47.7	5.2	1.6	0.7	2,238	244	75	33

<sup>a</sup> EIS Table 2-11.

**Key:** LTO = landing and takeoff, MOB 1 = First Main Operating Base.

**Table D.2-13. KC-46A Aircraft Closed Pattern Operations at  
Fairchild AFB – KC-46A MOB 1 Scenario**

Scenario/Operation	Operations per Year <sup>a</sup>	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
MOB 1									
Closed Pattern - Radar & Initial to Overhead	6,415	12.0	2.0	–	1.0	1,283	214	–	107
Closed Pattern - VFR	4,357	5.0	2.0	–	1.0	363	145	–	73
Closed Pattern - Tactical	3,023	8.0	2.0	2.0	1.0	403	101	101	50
TIMs - KC-46A MOB 1						2,049	460	101	230

<sup>a</sup> EIS Table 2-11 and SAIC 2013I. Closed Pattern – Tactical ops reduced by 7.5% to reflect amount of time above 3,000 feet AGL.

**Key:** – = No activity, % = percent, AGL = above ground level, MOB 1 = First Main Operating Base, ops = operations, VFR = visual flight rules.

**Table D.2-14. Annual Aircraft LTOs at  
Fairchild AFB – KC-46A Project Scenarios**

Aircraft	Annual LTOs	
	2012	MOB 1
KC-135	1,474	–
UH-60	1,302	1,302
UH-1N	412	412
Transient	975	975
KC-46A	–	2,815
<b>Total LTOs</b>	<b>4,162</b>	<b>5,503</b>

**Key:** – = No activity, LTO = landing and takeoff, MOB 1 = First Main Operating Base.

**Table D.2-15. Annual Average Nonroad Equipment Emission Factors – Fairchild AFB KC-46A Scenarios**

HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
100-175 HP Diesel	0.54	3.92	4.58	0.13	0.61	0.56	608	0.094	0.007	612
<b>Year 2016 MOB 1</b>										
100-175 HP Diesel	0.38	2.75	3.11	0.12	0.46	0.42	608	0.094	0.007	612
HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2012</b>										
100-175 HP Diesel	0.040	0.006	0.011	0.001	–	–	–	–	–	–
<b>Year 2016 MOB 1</b>										
100-175 HP Diesel	0.028	0.004	0.008	0.001	–	–	–	–	–	–
HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2012</b>										
100-175 HP Diesel	–	–	0.002	0.081	0.001	–	–	–	–	–
<b>Year 2016 MOB 1</b>										
100-175 HP Diesel	–	–	0.001	0.057	0.001	–	–	–	–	–
HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012</b>										
100-175 HP Diesel	–	0.005	–	–	–	0.008	–	–	–	0.006
<b>Year 2016 MOB 1</b>										
100-175 HP Diesel	–	0.004	–	–	–	0.006	–	–	–	0.004

<sup>a</sup> Data estimated with the use of the EPA NONROAD 2008a model (USEPA 2009) for Spokane County, Washington.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, Hp = horsepower, MOB 1 = First Main Operating Base, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-16. Annual Air Emissions for AGE Usages –  
Fairchild AFB KC-46A MOB 1 Scenario**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
Aerospace Ground Support Equipment	1.24	8.89	10.45	0.30	1.38	1.27	1,385	0.21	0.02	1,395
<b>Subtotal - Year 2012</b>	<b>1.24</b>	<b>8.89</b>	<b>10.45</b>	<b>0.30</b>	<b>1.38</b>	<b>1.27</b>	<b>1,385</b>	<b>0.21</b>	<b>0.02</b>	<b>1,395</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.59	4.22	4.80	0.18	0.71	0.65	937.05	0.14	0.01	943
<b>Subtotal - MOB 1 Scenario</b>	<b>0.59</b>	<b>4.22</b>	<b>4.80</b>	<b>0.18</b>	<b>0.71</b>	<b>0.65</b>	<b>937</b>	<b>0.14</b>	<b>0.01</b>	<b>943</b>

Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate	1,2-Dichloropropane
<b>Year 2012</b>										
Aerospace Ground Support Equipment	0.092	0.014	0.025	0.002	–	–	–	–	–	–
<b>Subtotal - Year 2012</b>	<b>0.092</b>	<b>0.014</b>	<b>0.025</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.044	0.007	0.012	0.001	–	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	<b>0.044</b>	<b>0.007</b>	<b>0.012</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

Scenario/Source	Annual Emissions - Tons									
	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene	Phenol
<b>Year 2012</b>										
Aerospace Ground Support Equipment	–	–	0.004	0.185	0.002	–	–	–	–	–
<b>Subtotal - Year 2012</b>	<b>–</b>	<b>–</b>	<b>0.004</b>	<b>0.185</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.002	0.088	0.001	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	<b>–</b>	<b>–</b>	<b>0.002</b>	<b>0.088</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

Scenario/Source	Annual Emissions - Tons									
	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012</b>										
Aerospace Ground Support Equipment	0.000	0.012	0.001	–	–	0.019	–	–	–	0.013
<b>Subtotal - Year 2012</b>	<b>0.000</b>	<b>0.012</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.019</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.013</b>
<b>Year 2016 - MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.006	0.000	–	–	0.009	–	–	–	0.006
<b>Subtotal - MOB 1 Scenario</b>	<b>0.000</b>	<b>0.006</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.009</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.006</b>

<sup>a</sup> 2012 AGE emissions \* 2016 KC-46A LTOs / 2012 total LTOs \* 2016/2012 Nonroad EFs.

**Key:** – = Source does not emit particular pollutant, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, Hp = horsepower, MOB 1 = First Main Operating Base, N<sub>2</sub>O = nitrous oxide, NO<sub>x</sub> = nitrogen oxides, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-17. Annual VMT for GMVs by Vehicle Class –  
Fairchild AFB Project Scenarios**

VEH TYPE NAME	# of Vehicles	M/H/U/K CODE	FUEL TYPE	VEH WEIGHT	ANNUAL VMT
TRK DIGGER DERRICK MAIN	1	H	–	56,000	100
SDN LAW ENF	4	M	A	3,069	26,000
SDN CMPT 4PAX CL II	1	M	A	3,300	1,900
SDN CMPT 4PAX CL II	17	M	A	3,300	1,900
TRK 3/4T CREW CAB 4X2 PU	5	M	A	2,838	4,800
TRK 3/4T CREW CAB 4X4 PU	6	M	A	9,200	7,200
TRK 1/2T4X4 4600&5799GVW	2	M	A	7,999	2,800
TRK STK 4X2 1 T 7000 GVW	5	M	A	4,070	2,800
TRK CRL 4X2 8 PAX	1	M	A	4,800	3,700
TRK PU CMPT 4X2	6	M	A	2,400	3,600
TRK CRL 4X2 15 PAX	1	M	A	5,830	7,200
TRK CGO CMPT 4X4 3500G G	1	M	A	5,540	4,800
TRK CRL 4X2 7 PAX	13	M	A	4,800	4,800
Maint Utility Del Van	6	M	A	9,200	3,400
TRK UTILITY 4X4 4 DOOR	3	M	A	6,180	7,500
TRK 1/2T CREW CAB 4X4	2	M	A	6,180	4,800
<b>Total VMT - Alternative Fuels</b>					<b>87,300</b>
DEICER TRUCK MOUNTED	9	H	D	53,500	150
LAVATORY SERVICE TRUCK	1	H	D	9,300	100
STAIRCASE TRUCK	1	H	D	14,100	100
TRAC ACFT TWG MB-2	7	H	D	53,000	150
TRAC TOW SUPPORT EQP	7	H	D	9,320	300
FFTT 4X4	2	H	D	9,320	300
AMB MODULAR 4X4	2	M	D	10,190	5,000
BUS MTR 16PAX 4X2 DED/A12	3	M	D	14,050	800
BUS SCH 25-29 PAX 4X2 DE	3	M	D	26,500	3,000
BUS SCH 42&45 PAX 4X2 DE	6	M	D	16,954	8,500
TRK TK FUEL 1200 GL 4X2	3	H	D	16,700	200
TRK TK FUEL 1200 GL 4X4	1	H	D	16,700	200
TRK TRAC 6X4 MLOX 64-72K	1	M	D	58,000	5,600
TRK TK 6000 GAL R11 DED	8	H	D	23,960	550
TRK V HILFT 21000G 3T DE	1	M	D	21,560	100
TRK HI LIFT CGO 6X4 9T	1	M	Z	19,950	100
TRK MAINT 3/4T 4X4 GED	2	M	D	5,790	2,500
TRK 3/4T CREW CAB 4X2 PU	1	M	D	9,200	4,800
TRK 3/4T CREW CAB 4X4 PU	5	M	D	9,200	7,200
TRK DP 4X4 24M & 33999G	4	M	D	13,035	1,500
TRK V REFRGR 4X2 19000G	1	M	D	11,480	1,000
TRK CGO 4X4 17M&20999G G	1	M	D	11,955	3,600
TRK MAINT TEL-UT 4X2	23	M	D	5,900	5,000
TRK DP 24000-33000G 4X2	5	M	D	12,675	1,500
TRK STK 4X2 1 T 7000 GVW	5	M	D	8,500	2,800
TRK STK HI LIFT 3T	1	M	D	19,320	100
TRK HI REA 30&59 FT	1	H	D	33,000	200
TRK HYDRANT FUELING R-12	8	H	D	16,425	420
Maint Utility Del Van	4	M	D	6,400	3,400
TRK S&P 10000GVW 4X4	1	M	D	8,500	3,600
TRK WKR HYD TYPE 1 32000	1	M	D	22,430	1,200
TRK TRAC 6X4 39.5-43K GVW	1	M	D	13,780	3,600
TRK DP 44500GVW 6X4	3	M	D	46,000	1,200
TRUCK WRECKER TILT-BED	1	M	D	27,360	2,000
TRK HMMVV (M1165A1)	1	M	D	5,900	50
SEWER TRK SINGLE AXLE	1	H	D	12,940	300

**Table D.2-17. Annual VMT for GMVs by Vehicle Class –  
Fairchild AFB Project Scenarios (Continued)**

VEH TYPE NAME	# of Vehicles	M/H/U/K CODE	FUEL TYPE	VEH WEIGHT	ANNUAL VMT
HMMWV M1151A1	1	M	D	–	100
HMMWV M1165A1B3AFP	2	M	D	10,610	100
TRAC FTRACD SZ T7	1	H	D	39,865	200
TRAC WHLD IW70	2	H	D	7,275	120
TRAC W-BACKHOE / LOADER	2	H	D	17,730	150
LODR SCP PT 2 1-2&3 1-2C	1	H	D	29,300	300
LODR SCP PT 1 1-2 & 2 CY	2	H	D	21,701	300
LODR SCP PT 4CY	1	H	D	38,000	300
EXCAV WHL MTD HYD OP PT	1	H	D	50,108	100
GRADER SIZE 5	2	H	D	33,400	220
CRANE 18 T WHEEL IND	2	H	D	–	100
DISTR WTR TRK	1	M	D	17,690	1,200
SNO RML U MLTPU 3000 TPH	6	H	D	27,610	250
CLNR VAC TM SP MLTPUR AT	3	H	D	17,000	350
45K RVSBLE SNO PLOW	8	H	D	50,000	200
SNOW BROOM AND BLOWER	8	H	D	39,500	300
RLR RD TAND 2RL 2.5T	1	H	D	6,100	100
TRK FL 10K AT 463L	1	H	D	25,670	200
TRK FL 10K 463L	4	H	D	21,725	100
TUG WHSE 4K	1	H	D	7,000	100
TRK FL 4K DED	4	H	D	9,030	200
TRK FL DED 6M-6200 PT	1	H	D	10,920	100
TRK FL 15K	1	H	D	36,514	100
HALVORSEN ACFT LDR 25K	2	H	D	31,350	100
TRK FIRE PUMPER P-22	1	H	D	24,100	250
TRK FIRE PUMPER P-24	1	H	D	27,920	450
TRK FIRE CRS RESCUE P-19	2	H	D	24,310	200
TRK FIRE CRS RESCUE P-23	2	H	D	44,230	250
TRK WATER TANKER P-26	1	H	D	27,110	100
TRK FFGT HRV P-28	1	H	D	25,400	100
TRK FFGT HMV P-31 4X2	1	M	D	12,015	100
TRK FFGT QUINT P-33	1	H	D	24,100	100
<b>Total VMT - Diesel Fuels</b>					<b>77,960</b>
SDN CMPT 4PAX CL II	3	M	X	3,300	1,900
SDN CMPT 4PAX CL II	2	M	G	3,300	1,900
TRUCK 1/2T REG CAB 4X2	2	M	G	9,200	6,000
TRK MAINT 3/4T 4X4 GED	2	M	G	5,790	2,500
TRK 3/4T CREW CAB 4X2 PU	3	M	G	2,838	4,800
TRK 3/4T CREW CAB 4X4 PU	9	M	G	9,200	7,200
TRK 3/4T CREW CAB 4X2 PU	1	M	X	2,838	4,800
TRK STK 4X4 12500&16999G	2	M	G	9,600	3,000
TRK CGO 4X4 17M&20999G G	1	M	G	11,955	3,600
TRK MAINT TEL-UT 4X2	1	M	G	5,100	5,000
TRK 1/2T4X4 4600&5799GVW	3	M	G	7,999	2,800
TRK STK 4X2 1 T 7000 GVW	6	M	G	4,070	2,800
TRK CRL 4X2 8 PAX	2	M	G	4,800	3,700
TRK PU CMPT 4X2	15	M	G	5,540	3,600
TRK PNL 4X2 6999G / UNDE	3	M	G	6,824	3,700
TRK CRL 4X2 15 PAX	3	M	G	5,830	7,200
TRK CGO CMPT 4X4 3500G G	2	M	G	5,540	4,800
TRK CRL 4X2 7 PAX	4	M	G	2,838	4,800
Maint Utility Del Van	10	M	G	6,400	3,400
TRK S&P 4X2 10000 GVW	9	M	G	8,500	3,800
TRK S&P 10000GVW 4X4	2	M	G	8,500	3,600
TRK UTILITY 4X4 4 DOOR	2	M	G	9,200	7,500
TRK 1/2T CREW CAB 4X4	1	M	G	6,180	4,800
TUG WHSE 4K	1	H	G	7,000	100
<b>Total VMT - Gasoline Fuels</b>					<b>97,300</b>
TRK FL ELEC NARI 3000	2	H	N	8,780	200
TRK F/L ELEC SEATED 3K	1	H	V	–	120

**Key:** – = No activity, # = number, VEH = vehicle, VMT = vehicle miles traveled.

**Table D.2-18. Annual Average On-Road Vehicle Emission Factors – Fairchild AFB KC-46A Scenarios**

Scenario/Vehicle Class	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
CNG-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
LDGV - Road 3	0.05	2.38	0.36	0.01	0.02	0.01	321	0.0006	0.0001	321
LDGT1 - Road 3	0.13	4.85	0.86	0.01	0.04	0.02	448	0.0009	0.0002	448
LDDT - Road 3	0.40	1.82	2.82	–	0.38	0.02	443	0.0002	0.0002	444
HDGV - Road 3	0.13	4.85	0.86	0.01	0.04	0.02	448	0.0009	0.0002	448
HDDV - Road 3	0.42	2.51	10.68	0.01	0.56	0.50	1,949	0.0010	0.0009	1,949
<b>Year 2016 FTU or MOB 1</b>										
CNG-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
LDGV - Road 3	0.02	1.84	0.18	0.01	0.02	0.01	302	0.001	0.0001	302
LDGT1 - Road 3	0.10	4.26	0.70	0.01	0.04	0.02	413	0.001	0.0002	413
LDDT - Road 3	0.10	4.26	1.99	–	0.04	0.02	413	–	–	413
HDGV - Road 3	0.10	4.26	0.70	0.01	0.04	0.02	413	0.001	0.0002	413
HDDV - Road 3	0.25	1.57	6.63	0.01	0.36	0.30	1,949	0.001	0.001	1,949

<sup>a</sup> Factors estimated with the use of the EPA MOVES2010b model (USEPA 2013) for road 3 conditions and based on default parameters for Spokane County, Washington.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CNG = compressed natural gas, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, HDGV = heavy duty gasoline vehicle, LDDT = light duty diesel truck, LDGT = light duty gasoline truck, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-19. Annual Number of Workers at Fairchild AFB – KC-46A Project Scenarios**

Scenario	Total # of Workers
Year 2012	5,835
Year 2016 MOB 1	6,273

**Key:** EIS = environmental impact statement; MOB 1 = First Main Operating Base.

**Source:** EIS Table 2-10.

**Table D.2-20. Annual Emissions from GMV Activities – Fairchild AFB KC-46A Scenarios**

Scenario/ Vehicle Class	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.04	0.22	0.92	0.00	0.05	0.04	167.46	0.00	0.00	167.48
Gasoline Vehicles	0.01	0.52	0.09	0.00	0.00	0.00	48.09	0.00	0.00	48.10
<b>Total</b>	<b>0.05</b>	<b>0.74</b>	<b>1.01</b>	<b>0.00</b>	<b>0.05</b>	<b>0.04</b>	<b>215.55</b>	<b>0.00</b>	<b>0.00</b>	<b>215.59</b>
<b>Year 2016 MOB 1<sup>a</sup></b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.02	0.14	0.61	0.00	0.03	0.03	180.05	0.00	0.00	180.07
Gasoline Vehicles	0.01	0.49	0.08	0.00	0.00	0.00	47.63	0.00	0.00	47.64
<b>Total</b>	<b>0.03</b>	<b>0.64</b>	<b>0.69</b>	<b>0.00</b>	<b>0.04</b>	<b>0.03</b>	<b>227.67</b>	<b>0.00</b>	<b>0.00</b>	<b>227.71</b>

<sup>a</sup> Year 2016 emissions = 2012 emissions \* 2016 worker fraction of 2012 \* year 2016 vehicle emission factor/ 2012 vehicle emission factor.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMV = government motor vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-21. Annual On Base On-Road Vehicle Mileage Calculations – Fairchild AFB KC-46A Project Scenarios**

Scenario	# of Workers	Vehicle Occupancy Rate <sup>a</sup>	On-Base Miles per Round Trip	On-Base Miles per Day	On-Base Miles per year <sup>b</sup>
Year 2012	5,835	0.95	1.00	5,543	1,441,245
Year 2016 MOB 1	6,273	0.95	1.00	5,959	1,549,431

<sup>a</sup> Source is Washington State Department of Transportation 2012.

<sup>b</sup> Based on 260 days per year.

**Key:** # = number, MOB 1 = First Main Operating Base.

**Table D.2-22. Annual Average On-Road Emission Factors – Fairchild AFB KC-46A Scenarios**

Project Year/ Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV - Road 3	0.05	2.38	0.36	0.01	0.02	0.01	321	0.00	0.00	321
HDDV - Road 3	0.42	2.51	10.68	0.01	0.56	0.50	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.06	2.38	0.57	0.01	0.03	0.02	354	0.00	0.00	354
<b>Year 2016 MOB 1</b>										
LDGV - Road 3	0.02	1.84	0.18	0.01	0.02	0.01	302	0.00	0.00	302
HDDV - Road 3	0.25	1.57	6.63	0.01	0.36	0.30	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.02	1.84	0.31	0.01	0.03	0.02	335	0.00	0.00	335

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Spokane County.

<sup>b</sup> Equal to 98/2% LDGV/HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-23. Annual Emissions from On Base On-Road Vehicle Activities – Fairchild AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012	0.09	3.78	0.90	0.01	0.05	0.03	562	0.00	0.00	562
Year 2016 MOB 1	0.04	3.14	0.53	0.01	0.05	0.03	572	0.00	0.00	573

<sup>a</sup> Assumes that 2% of the fleet is HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, HDDV = heavy duty diesel vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-24. Annual Off Base On-Road Vehicle Mileage Calculations – Fairchild AFB KC-46A Scenarios**

Scenario	# of Workers	Vehicle Occupancy Rate <sup>a</sup>	Off-Base Miles per 1-Way Trip <sup>a</sup>	Off-Base Miles per Day	On-Base Miles per year <sup>b</sup>
Year 2012	5,835	0.95	10.90	120,843	31,419,141
Year 2016 MOB 1	6,273	0.95	10.90	129,914	33,777,596

<sup>a</sup> Source: Washington State Department of Transportation 2012.

<sup>b</sup> Based on 260 days per year.

**Key:** # = number, MOB 1 = First Main Operating Base.

**Table D.2-25. Annual Average On-Road Emission Factors –  
Fairchild AFB KC-46A Scenarios**

Project Year/ Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV - Road 3	0.05	2.38	0.36	0.01	0.02	0.01	321	0.0006	0.0001	321
LDGV - Road 5	0.07	3.06	0.38	0.01	0.04	0.02	397	0.0008	0.0002	398
LDGV - Composite <sup>b</sup>	0.06	2.96	0.38	0.01	0.03	0.02	386	0.0008	0.0002	386
HDDV - Road 3	0.42	2.51	10.68	0.01	0.56	0.50	1,949	0.0010	0.0009	1,949
HDDV - Road 5	0.66	3.67	13.13	0.02	1.00	0.83	2,426	0.0012	0.0011	2,427
HDDV - Composite <sup>b</sup>	0.62	3.49	12.76	0.02	0.93	0.78	2,355	0.0012	0.0011	2,355
<b>Year 2016 FTU</b>										
LDGV - Road 3	0.02	1.84	0.18	0.01	0.02	0.01	302	0.0006	0.0001	302
LDGV - Road 5	0.03	2.35	0.18	0.01	0.04	0.01	374	0.0007	0.0002	374
LDGV - Composite <sup>b</sup>	0.03	2.22	0.18	0.01	0.03	0.01	356	0.0007	0.0001	356
HDDV - Road 3	0.25	1.57	6.63	0.01	0.36	0.30	1,949	0.0010	0.0009	1,949
HDDV - Road 5	0.40	2.29	8.24	0.02	0.67	0.51	2,427	0.0012	0.0011	2,427
HDDV - Composite <sup>b</sup>	0.37	2.11	7.84	0.02	0.59	0.46	2,307	0.0012	0.0011	2,308

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Spokane County, Washington.

<sup>b</sup> Equal to 15/85% road 3/road 5 conditions.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-26. Annual Emissions from Off-Base Vehicle Activities –  
Fairchild AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV	2.15	100.33	12.82	0.23	1.17	0.53	13,100.18	0.03	0.01	13,102.39
HDDV	0.43	2.42	8.84	0.01	0.64	0.54	1,630.96	0.00	0.00	1,631.22
<b>Total</b>	<b>2.58</b>	<b>102.75</b>	<b>21.66</b>	<b>0.24</b>	<b>1.81</b>	<b>1.07</b>	<b>14,731.15</b>	<b>0.03</b>	<b>0.01</b>	<b>14,733.61</b>
<b>Year 2016 MOB 1</b>										
LDGV	0.99	81.12	6.68	0.21	1.14	0.50	12,981.67	0.03	0.01	12,983.86
HDDV	0.27	1.57	5.84	0.01	0.44	0.34	1,718.06	0.00	0.00	1,718.32
<b>Total</b>	<b>1.27</b>	<b>82.69</b>	<b>12.52</b>	<b>0.22</b>	<b>1.58</b>	<b>0.84</b>	<b>14,699.73</b>	<b>0.03</b>	<b>0.01</b>	<b>14,702.18</b>

<sup>a</sup> Assumes that 2% of the fleet is HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-27. Annual Mobile Fuel Transfer Activities and VOC Emissions –  
Fairchild AFB KC-46A Scenarios**

Scenario	Gallons per Year <sup>a</sup>	Tons per Year									
		VOC	Benzene	Cumene	Ethylbenzene	Hexane	MTBE	Naphthalene	Toluene	2,2,4-Trimethylpentane	Xylenes
Year 2008 - Altus Refueling Truck to Aircraft	9,695,916	0.10	0.0006	0.0003	0.0002	0.0001	0.0005	0.0000	0.0011	0.0001	0.0017
Year 2012 - Fairchild AFB - Jet A Issue	14,852,636	0.15	0.0009	0.0004	0.0004	0.0001	0.0007	0.0000	0.0017	0.0002	0.0025
Year 2016 MOB 1	28,365,109	0.28	0.0018	0.0008	0.0007	0.0002	0.0014	0.0000	0.0032	0.0003	0.0048

<sup>a</sup> Altus data from 2008 AEI (Weston Solutions, Inc. 2008). Fairchild 2012 data (Fairchild Air Force Base 2013). Year 2016 MOB 1 throughput = 2012 gallons \* KC-46A LTOs/year 2012 KC-135 LTOs.

<sup>b</sup> Future year emissions = 2008 emissions \* future year gallons/2008 gallons.

**Key:** AEI = Air Emissions Inventory, LTO = landing and takeoff, MOB 1 = First Main Operating Base, VOC = volatile organic compound.

**Table D.2-28. Annual Emissions from Point and Area Sources – Fairchild AFB KC-46A Scenarios**

Scenario Year/ Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012 - w/o NG or LPG	12.79	0.14	0.51	0.01	0.02	0.02	–	–	–	–
Year 2012 - NG	0.69	10.52	12.52	0.08	0.95	0.95	15,025	0.29	0.08	15,056
Year 2012 - LPG	0.00	0.02	0.04	0.00	0.00	0.00	34	0.00	0.00	35
<b>Total - Year 2012<sup>a</sup></b>	<b>13.48</b>	<b>10.68</b>	<b>13.07</b>	<b>0.09</b>	<b>0.97</b>	<b>0.97</b>	<b>15,058</b>	<b>0</b>	<b>0</b>	<b>15,090</b>
Year 2016 MOB 1	<b>14.49</b>	<b>11.48</b>	<b>14.05</b>	<b>0.09</b>	<b>1.05</b>	<b>1.05</b>	<b>16,189</b>	<b>0</b>	<b>0</b>	<b>16,223</b>

<sup>a</sup> Year 2012 existing emissions provided by Fairchild AFB. Year 2016 emissions = 2012 emissions \* 2016 worker fraction of 2012 workers.

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LPG = liquefied petroleum gas, MOB 1 = First Main Operating Base, NG = natural gas, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound, w/o = without.

**Table D.2-29. Annual Emissions for Existing Operations at Fairchild AFB – Year 2012**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-135 Aircraft Operations	5.92	97.27	178.37	16.32	0.89	0.89	49,500	1.37	1.54	45,460
UH-60	0.98	8.68	3.03	0.25	2.02	2.02	2,350	0.07	0.07	2,159
UH-1N	0.16	1.08	0.83	0.07	0.73	0.73	555	0.02	0.02	510
Transient Aircraft Operations	4.25	22.46	64.48	5.43	2.44	2.44	15,406	0.43	0.48	14,148
On-Wing Aircraft Engine Testing - C-17	10.90	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	2.03	29.48	11.25	1.50	0.08	0.08	4,557	0.13	0.14	4,185
On-Wing Aircraft Engine Testing - UH-1M	0.11	0.52	0.06	0.01	0.08	0.08	59	0.00	0.00	55
On-Wing Aircraft Engine Testing - UH-60	0.02	0.52	0.16	0.01	0.14	0.14	104	0.00	0.00	96
Aerospace Ground Support Equipment	1.24	8.89	10.45	0.30	1.38	1.27	1,385	0.21	0.02	1,268
GMVs/Nonroad Equipment	0.05	0.74	1.01	0.00	0.05	0.04	216	0.00	0.00	196
Privately-Owned Vehicles - On-Base	0.09	3.78	0.90	0.01	0.05	0.03	562	0.00	0.00	511
Privately-Owned Vehicles - Off-Base	2.58	102.75	21.66	0.24	1.81	1.07	14,731	0.03	0.01	13,394
Mobile Fuel Transfer Operations	0.15	–	–	–	–	–	–	–	–	–
Point and Area Sources	13.48	10.68	13.07	0.09	0.97	0.97	15,058	0.29	0.08	13,718
<b>Total Emissions</b>	<b>41.96</b>	<b>286.84</b>	<b>305.27</b>	<b>24.22</b>	<b>10.65</b>	<b>9.77</b>	<b>104,484</b>	<b>2.54</b>	<b>2.36</b>	<b>95,699</b>

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloroform	Chloro-methane	o-Cresol	p-Cresol
KC-135 Aircraft Operations	0.000	0.000	0.027	0.000	0.000	0.005	0.028	0.012	0.000	0.000
UH-60	0.004	0.002	0.011	0.000	0.000	0.000	0.000	0.000	0.000	0.027
UH-1N	0.001	0.001	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.008
Transient Aircraft Operations	0.010	0.012	0.018	0.000	0.000	0.000	0.000	0.000	0.000	0.000
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	0.000	0.000	0.002	0.000	0.000	0.000	0.003	0.001	0.000	0.000
On-Wing Aircraft Engine Testing - UH-1M	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.002
On-Wing Aircraft Engine Testing - UH-60	0.001	0.000	0.002	0.000	0.000	0.000	0.000	0.000	0.000	0.004
Aerospace Ground Support Equipment	0.092	0.014	0.025	0.002	0.000	0.000	0.000	0.000	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.001	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions</b>	<b>0.108</b>	<b>0.028</b>	<b>0.090</b>	<b>0.002</b>	<b>0.000</b>	<b>0.006</b>	<b>0.031</b>	<b>0.013</b>	<b>–</b>	<b>–</b>

**Table D.2-29. Annual Emissions for Existing Operations at Fairchild AFB – Year 2012 (Continued)**

Source Type	Tons per Year									
	<i>Cumene</i>	<i>Dibenzo-furan</i>	<i>Dibutyl Phthalate</i>	<i>1,2-Dichloro-propane</i>	<i>2,4-Dinitro-phenol</i>	<i>DEHP</i>	<i>Ethyl-benzene</i>	<i>Formalde-hyde</i>	<i>Hexane</i>	<i>Methanol</i>
KC-135 Aircraft Operations	–	0.000	0.000	0.00	0.00	0.05	0.00	0.35	0.00	0.00
UH-60	–	0.000	0.000	0.00	0.00	0.00	0.00	0.05	0.00	0.00
UH-1N	–	0.000	0.000	0.00	0.00	0.00	0.00	0.02	0.00	0.00
Transient Aircraft Operations	–	0.000	0.000	0.00	0.00	0.00	0.00	0.06	0.00	0.00
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	0.000	0.000	0.000	0.000	0.007	0.001	0.094	0.000	0.000
On-Wing Aircraft Engine Testing - UH-1M	–	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
On-Wing Aircraft Engine Testing - UH-60	–	0.000	0.000	0.000	0.000	0.000	0.000	0.004	0.000	0.000
Aerospace Ground Support Equipment	–	–	0.000	0.000	0.000	0.000	0.004	0.185	0.002	0.000
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.000	–	–	–	–	–	0.000	–	0.000	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions</b>	<b>0.000</b>	<b>–</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.058</b>	<b>0.012</b>	<b>0.768</b>	<b>0.002</b>	<b>0.000</b>

Source Type	Tons per Year									
	<i>Methylene Chloride</i>	<i>MIBK</i>	<i>MTBE</i>	<i>Naphth-alene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propio-naldehyde</i>	<i>Styrene</i>	<i>1,1,2,2-Tetra-chloro-ethane</i>	<i>Tetra-chloro-ethene</i>
KC-135 Aircraft Operations	0.70	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.03
UH-60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UH-1N	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Transient Aircraft Operations	0.00	0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00	0.00
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	0.080	0.000	0.000	0.003	0.000	0.000	0.000	0.001	0.000	0.002
On-Wing Aircraft Engine Testing - UH-1M	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
On-Wing Aircraft Engine Testing - UH-60	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Aerospace Ground Support Equipment	0.000	–	0.000	0.000	0.000	0.000	0.012	0.001	0.000	0.000
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.001	0.000	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions</b>	<b>0.782</b>	<b>–</b>	<b>0.001</b>	<b>0.017</b>	<b>0.002</b>	<b>0.000</b>	<b>0.012</b>	<b>0.010</b>	<b>0.000</b>	<b>0.029</b>

**Table D.2-29. Annual Emissions for Existing Operations at Fairchild AFB – Year 2012 (Continued)**

Source Type	Tons per Year						
	Toluene	1,1,1-Trichloro-ethane	Trichloro-ethene	2,2,4 Trimethyl-pentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-135 Aircraft Operations	0.07	0.01	0.00	–	0.05	0.02	0.00
UH-60	0.00	0.00	0.00	–	0.00	0.00	0.00
UH-1N	0.00	0.00	0.00	–	0.00	0.00	0.00
Transient Aircraft Operations	0.01	0.00	0.00	–	0.00	0.00	0.00
On-Wing Aircraft Engine Testing - C-17	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	0.009	0.001	0.000	–	0.006	0.002	0.000
On-Wing Aircraft Engine Testing - UH-1M	0.000	0.000	0.000	–	0.000	0.000	0.000
On-Wing Aircraft Engine Testing - UH-60	0.000	0.000	0.000	–	0.000	0.000	0.000
Aerospace Ground Support Equipment	0.019	0.000	–	–	0.000	0.000	0.013
GMVs/Nonroad Equipment	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.002	–	–	0.000	–	–	0.003
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Emissions</b>	<b>0.109</b>	<b>0.008</b>	<b>–</b>	<b>0.000</b>	<b>0.057</b>	<b>0.020</b>	<b>0.017</b>

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMV = government motor vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.2-30. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Fairchild AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-46A Aircraft Operations	50.07	201.74	837.57	45.42	2.92	2.49	136,814	3.79	4.25	125,648
On-Wing Aircraft Engine Testing - KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,844	0.19	0.21	6,286
Aerospace Ground Support Equipment - KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	937	0.14	0.01	858
UH-60 Aircraft Operations	0.91	8.00	2.21	0.20	1.50	1.50	1,952	0.05	0.06	1,793
UH-1N Aircraft Operations	0.14	0.68	0.26	0.02	0.24	0.24	184	0.01	0.01	169
Transient Aircraft	3.95	14.49	9.00	0.90	2.20	2.20	1,649	0.05	0.05	1,515
AGE - Existing Aircraft	0.56	4.03	4.58	0.18	0.67	0.62	895	0.14	0.01	819
On-Wing Aircraft Engine Testing - UH-1M	0.11	0.52	0.06	0.01	0.08	0.08	59	0.00	0.00	55
On-Wing Aircraft Engine Testing - UH-60	0.02	0.52	0.16	0.01	0.14	0.14	104	0.00	0.00	96
Government Motor Vehicles	0.03	0.64	0.69	0.00	0.04	0.03	228	0.00	0.00	207
Privately-Owned Vehicles - On-Base	0.04	3.14	0.53	0.01	0.05	0.03	572	0.00	0.00	521
Privately-Owned Vehicles - Off-Base	1.27	82.69	12.52	0.22	1.58	0.84	14,700	0.03	0.01	13,366
Mobile Fuel Transfer Operations	0.28	–	–	–	–	–	–	–	–	–
Point and Area Sources	14.49	11.48	14.05	0.09	1.05	1.05	16,189	0.31	0.09	14,748
<b>Total Proposed Emissions - 2016</b>	<b>86.86</b>	<b>381.69</b>	<b>915.36</b>	<b>49.58</b>	<b>11.36</b>	<b>10.04</b>	<b>181,128</b>	<b>4.71</b>	<b>4.71</b>	<b>166,078</b>
<b>Year 2012 Base Case Emissions</b>	<b>(41.96)</b>	<b>(286.84)</b>	<b>(305.27)</b>	<b>(24.22)</b>	<b>(10.65)</b>	<b>(9.77)</b>	<b>(104,484)</b>	<b>(2.54)</b>	<b>(2.36)</b>	<b>(95,699)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>44.90</b>	<b>94.84</b>	<b>610.10</b>	<b>25.36</b>	<b>0.72</b>	<b>0.27</b>	<b>76,644</b>	<b>2.17</b>	<b>2.35</b>	<b>70,379</b>
<b>Spokane County PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>				
<b>Fractional Increase from Existing Conditions</b>	<b>1.07</b>	<b>0.33</b>	<b>2.00</b>	<b>1.05</b>	<b>0.07</b>	<b>0.03</b>	<b>0.73</b>	<b>0.85</b>	<b>0.99</b>	<b>0.74</b>
<b>Spokane County 2008 Emissions</b>	<b>33,560</b>	<b>91,893</b>	<b>16,375</b>	<b>304</b>	<b>15,789</b>	<b>3,891</b>				<b>2,515,657</b>
<b>Fractional Increase from Spokane Co Emissions</b>	<b>0.001</b>	<b>0.001</b>	<b>0.04</b>	<b>0.08</b>	<b>0.0000</b>	<b>0.0001</b>				<b>0.03</b>

**Table D.2-30. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Fairchild AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
KC-46A Aircraft Operations	2.16	1.24	0.85	0.85	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-46A	0.62	0.36	0.24	0.24	–	–	–	–	–	–
Aerospace Ground Support Equipment - KC-46A	0.04	0.01	0.01	0.00	–	–	–	–	–	–
UH-60 Aircraft Operations	0.003	0.001	0.008	–	0.000	0.000	0.000	–	0.000	0.021
UH-1N Aircraft Operations	0.000	0.000	0.001	–	0.000	0.000	0.000	–	0.000	0.003
Transient Aircraft	0.009	0.011	0.017	–	–	–	–	–	–	–
AGE - Existing Aircraft	0.04	0.01	0.01	0.00	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UH-1M	0.000	0.000	0.001	–	0.000	0.000	0.000	–	0.000	0.002
On-Wing Aircraft Engine Testing - UH-60	0.001	0.000	0.002	–	0.000	0.000	0.000	–	0.000	0.004
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>2.877</b>	<b>1.618</b>	<b>1.147</b>	<b>1.099</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.000</b>	<b>0.030</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.108)</b>	<b>(0.028)</b>	<b>(0.090)</b>	<b>(0.002)</b>	<b>(0.000)</b>	<b>(0.006)</b>	<b>(0.031)</b>	<b>(0.013)</b>	<b>–</b>	<b>–</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.769</b>	<b>1.590</b>	<b>1.057</b>	<b>1.097</b>	<b>(0.000)</b>	<b>(0.005)</b>	<b>(0.031)</b>	<b>(0.013)</b>	<b>0.000</b>	<b>0.030</b>
<b>Spokane County PSD Thresholds</b>										
Fractional Increase from Existing Conditions	25.58	56.31	11.71	476.47	(0.31)	(0.98)	(0.99)	(1.00)		
Spokane County 2008 Emissions	–	–	–	–	–	–	–	–	–	–
Fractional Increase from Spokane Co Emissions	–	–	–	–	–	–	–	–	–	–

Source Type	Tons per Year									
	Cumene	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol
KC-46A Aircraft Operations	–	–	–	–	–	–	0.09	6.22	–	0.91
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	–	–	–	0.03	1.79	–	0.26
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	–	0.00	0.09	0.00	–
UH-60 Aircraft Operations	–	0.000	0.000	–	–	0.000	0.000	0.039	–	–
UH-1N Aircraft Operations	–	0.000	0.000	–	–	0.000	0.000	0.005	–	–
Transient Aircraft	–	–	–	–	–	–	0.002	0.060	–	–
AGE - Existing Aircraft	–	–	–	–	–	–	0.00	0.08	0.00	–
On-Wing Aircraft Engine Testing - UH-1M	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UH-60	–	0.000	0.000	–	–	0.000	0.000	0.004	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.00	–	–	–	–	–	0.00	–	0.00	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.001</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.120</b>	<b>8.283</b>	<b>0.002</b>	<b>1.174</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.000)</b>	<b>–</b>	<b>(0.000)</b>	<b>–</b>	<b>–</b>	<b>(0.058)</b>	<b>(0.012)</b>	<b>(0.768)</b>	<b>(0.002)</b>	<b>–</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.000</b>	<b>0.000</b>	<b>(0.000)</b>	<b>–</b>	<b>–</b>	<b>(0.057)</b>	<b>0.108</b>	<b>7.516</b>	<b>(0.000)</b>	<b>1.174</b>
<b>Spokane County PSD Thresholds</b>										
Fractional Increase from Existing Conditions	0.91		(0.32)			(0.99)	8.73	9.79	(0.02)	
Spokane County 2008 Emissions	–	–	–	–	–	–	–	–	–	–
Fractional Increase from Spokane Co Emissions	–	–	–	–	–	–	–	–	–	–

**Table D.2-30. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Fairchild AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2-Tetrachloroethane	Tetrachloroethene
KC-46A Aircraft Operations	–	–	–	0.27	0.37	–	–	0.16	–	–
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	0.08	0.11	–	–	0.04	–	–
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	0.00	0.01	0.00	–	–
UH-60 Aircraft Operations	0.003	0.000	–	0.001	0.001	–	–	0.001	0.000	–
UH-1N Aircraft Operations	0.000	0.000	–	0.000	0.000	–	–	0.000	0.000	–
Transient Aircraft	–	–	–	0.005	–	–	–	0.003	–	–
AGE - Existing Aircraft	–	–	–	–	–	0.000	0.006	0.000	–	–
On-Wing Aircraft Engine Testing - UH-1M	–	–	–	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UH-60	0.000	0.000	–	0.000	0.000	–	–	0.000	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.001	0.000	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.004</b>	<b>0.000</b>	<b>0.001</b>	<b>0.359</b>	<b>0.473</b>	<b>0.000</b>	<b>0.011</b>	<b>0.206</b>	<b>0.000</b>	<b>–</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.782)</b>	<b>–</b>	<b>(0.001)</b>	<b>(0.017)</b>	<b>(0.002)</b>	<b>(0.000)</b>	<b>(0.012)</b>	<b>(0.010)</b>	<b>(0.000)</b>	<b>(0.029)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>(0.778)</b>	<b>0.000</b>	<b>0.001</b>	<b>0.341</b>	<b>0.472</b>	<b>(0.000)</b>	<b>(0.001)</b>	<b>0.196</b>	<b>(0.000)</b>	<b>(0.029)</b>
<b>Spokane County PSD Thresholds</b>										
<b>Fractional Increase from Existing Conditions</b>	<b>(1.00)</b>		<b>0.91</b>	<b>19.61</b>	<b>244.33</b>	<b>(0.07)</b>	<b>(0.07)</b>	<b>19.57</b>	<b>(0.33)</b>	<b>(1.00)</b>
<b>Spokane County 2008 Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Spokane Co Emissions</b>	–	–	–	–	–	–	–	–	–	–

Source Type	Tons per Year						
	Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4 Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-46A Aircraft Operations	0.32	–	–	–	–	0.14	0.08
On-Wing Aircraft Engine Testing - KC-46A	0.09	–	–	–	–	0.04	0.02
Aerospace Ground Support Equipment - KC-46A	0.01	–	–	–	–	–	0.01
UH-60 Aircraft Operations	0.002	0.000	0.000	–	–	0.001	0.001
UH-1N Aircraft Operations	0.000	0.000	0.000	–	–	0.000	0.000
Transient Aircraft	0.008	–	–	–	–	–	–
AGE - Existing Aircraft	0.008	–	–	–	–	–	0.006
On-Wing Aircraft Engine Testing - UH-1M	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UH-60	0.000	0.000	–	–	–	0.000	0.000
Government Motor Vehicles	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.003	–	–	0.000	–	–	0.005
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.449</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>–</b>	<b>0.185</b>	<b>0.126</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.109)</b>	<b>(0.008)</b>	<b>–</b>	<b>(0.000)</b>	<b>(0.057)</b>	<b>(0.020)</b>	<b>(0.017)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.340</b>	<b>(0.008)</b>	<b>0.000</b>	<b>0.000</b>	<b>(0.057)</b>	<b>0.165</b>	<b>0.109</b>
<b>Spokane County PSD Thresholds</b>							
<b>Fractional Increase from Existing Conditions</b>	<b>3.12</b>	<b>(0.97)</b>		<b>0.91</b>	<b>(1.00)</b>	<b>8.19</b>	<b>6.54</b>
<b>Spokane County 2008 Emissions</b>	–	–	–	–	–	–	–
<b>Fractional Increase from Spokane Co Emissions</b>	–	–	–	–	–	–	–

**Key:** ( ) = parenthesis indicate negative numbers, – = Source does not emit particular pollutant, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, Co = County, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

### **D.3 GRAND FORKS AIR FORCE BASE REGIONAL CLIMATE**

Grand Forks AFB has a continental climate characterized by warm and wet summers and cold and relatively dry winters. Meteorological data collected at the Grand Forks International Airport are used to describe the climatic conditions of the Grand Forks AFB project region (NOAA 1998, 2013a).

**Temperature.** The average high and low temperatures during the summer months at Grand Forks International Airport range from about 81 °F to 57 °F. The average high and low temperatures during the winter months range from 34 °F to -3 °F.

**Precipitation.** Average annual precipitation at Grand Forks AFB is 20.8 inches. Precipitation is greatest during the warmer months of the year, and the peak monthly average of 3.5 inches occurs in June. Precipitation is at a minimum during the winter, as the lowest monthly average of 0.5 inches occurs in February. Snow is common during the colder months of the year; the average annual snowfall is 47.0 inches.

**Prevailing Winds.** The winds at Grand Forks AFB prevail from the north-northwest sector during the colder months of the year and they have a secondary maximum from the south-southeast (NDSCO 2013). The Grand Forks AFB region experiences breezy conditions, as the average wind speed for each month of the year is at least 8 miles per hour and the annual average wind speed is 9.4 miles per hour (NOAA 1998). The peak average monthly winds of 10 miles per hour occur from the months of October through April.

### D.3.1 OPERATIONS EMISSION CALCULATIONS FOR THE KC-46A PROJECT SCENARIOS AT GRAND FORKS AFB

**Table D.3-1. Aircraft Engine Emission Factors by Throttle Setting – RQ-4 and KC-46A Aircraft – Grand Forks AFB**

Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Allison AE3007 <sup>b</sup>											
Idle	428	–	17.31	3.82	1.06	0.15	0.15	3,216	0.09	0.10	3,249
Approach	947	–	3.27	7.77	1.06	0.22	0.22	3,216	0.09	0.10	3,249
Intermediate	2,532	–	0.83	17.43	1.06	0.24	0.24	3,216	0.09	0.10	3,249
Military	3,021	–	0.83	20.50	1.06	0.27	0.27	3,216	0.09	0.10	3,249
TPE331-10GD											
Idle	–	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Approach	–	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Intermediate	–	–	–	–	–	–	–	3,216	0.09	0.10	3,249
Military	–	–	–	–	–	–	–	3,216	0.09	0.10	3,249
P&W 4062 <sup>c</sup>											
Idle	1,663	12.49	42.61	3.78	1.06	0.11	0.10	3,216	0.09	0.10	3,249
Approach	5,702	0.10	1.93	12.17	1.06	0.05	0.04	3,216	0.09	0.10	3,249
Climbout	16,870	0.08	0.50	25.98	1.06	0.07	0.06	3,216	0.09	0.10	3,249
Take-off	21,622	0.09	0.61	34.36	1.06	0.08	0.07	3,216	0.09	0.10	3,249
Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloro- form	Chloro- methane	o-Cresol	p-Cresol
Allison AE3007 <sup>b</sup>											
Idle	428	0.119	0.067	0.047	0.047	–	–	–	–	–	–
Approach	947	0.030	0.017	0.012	0.012	–	–	–	–	–	–
Intermediate	2,532	0.013	0.007	0.005	0.005	–	–	–	–	–	–
Military	3,021	0.013	0.007	0.005	0.005	–	–	–	–	–	–
TPE331-10GD											
Idle	–	–	–	–	–	–	–	–	–	–	–
Approach	–	–	–	–	–	–	–	–	–	–	–
Intermediate	–	–	–	–	–	–	–	–	–	–	–
Military	–	–	–	–	–	–	–	–	–	–	–
P&W 4062 <sup>c</sup>											
Idle	1,663	–	–	–	–	–	–	–	–	–	–
Approach	5,702	–	–	–	–	–	–	–	–	–	–
Climbout	16,870	–	–	–	–	–	–	–	–	–	–
Take-off	21,622	–	–	–	–	–	–	–	–	–	–
Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Cumene	Dibenzo- furan	Dibutyl Phthalate	1,2- Dichloro- propane	2,4- Dinitro- phenol	DEHP	Ethyl- benzene	Formal- dehyde	Hexane	Methanol
Allison AE3007 <sup>b</sup>											
Idle	428	–	–	–	–	–	–	0.006	0.341	–	0.050
Approach	947	–	–	–	–	–	–	0.001	0.087	–	0.013
Intermediate	2,532	–	–	–	–	–	–	0.001	0.037	–	0.005
Military	3,021	–	–	–	–	–	–	0.001	0.037	–	0.005
TPE331-10GD											
Idle	–	–	–	–	–	–	–	–	–	–	–
Approach	–	–	–	–	–	–	–	–	–	–	–
Intermediate	–	–	–	–	–	–	–	–	–	–	–
Military	–	–	–	–	–	–	–	–	–	–	–
P&W 4062 <sup>c</sup>											
Idle	1,663	–	–	–	–	–	–	–	–	–	–
Approach	5,702	–	–	–	–	–	–	–	–	–	–
Climbout	16,870	–	–	–	–	–	–	–	–	–	–
Take-off	21,622	–	–	–	–	–	–	–	–	–	–

**Table D.3-1. Aircraft Engine Emission Factors by Throttle Setting – RQ-4 and KC-46A Aircraft – Grand Forks AFB (Continued)**

Engine Type/ Throttle Setting	Fuel Flow (Pounds/ Hour)	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>									
		Methylene Chloride	MIBK	MTBE	Naphth- alene	Phenol	POM	Propion- aldehyde	Styrene	1,1,2,2- Tetra- chloro -ethane	Tetra- chloro- ethene
Allison AE3007 <sup>b</sup>											
Idle	428	—	—	—	0.014	0.019	—	0.019	0.008	—	—
Approach	947	—	—	—	0.004	0.005	—	0.005	0.002	—	—
Intermediate	2,532	—	—	—	0.002	0.002	—	0.002	0.001	—	—
Military	3,021	—	—	—	0.002	0.002	—	0.002	0.001	—	—
TPE331-10GD											
Idle	—	—	—	—	—	—	—	—	—	—	—
Approach	—	—	—	—	—	—	—	—	—	—	—
Intermediate	—	—	—	—	—	—	—	—	—	—	—
Military	—	—	—	—	—	—	—	—	—	—	—
P&W 4062 <sup>c</sup>											
Idle	1,663	—	—	—	—	—	—	—	—	—	—
Approach	5,702	—	—	—	—	—	—	—	—	—	—
Climbout	16,870	—	—	—	—	—	—	—	—	—	—
Take-off	21,622	—	—	—	—	—	—	—	—	—	—

Engine Type/ Throttle Setting	Emission Factors (Pounds/1000 Pounds Fuel) <sup>a</sup>						
	Toluene	1,1,1- Trichloro- ethane	Trichloro- ethene	2,2,4 Trimethyl- pentane	Vinyl Acetate	mp-Xylene	o-Xylene
Allison AE3007 <sup>b</sup>							
Idle	0.017	—	—	—	—	0.008	0.006
Approach	0.004	—	—	—	—	0.002	0.001
Intermediate	0.002	—	—	—	—	0.001	0.001
Military	0.002	—	—	—	—	0.001	0.001
TPE331-10GD							
Idle	—	—	—	—	—	—	—
Approach	—	—	—	—	—	—	—
Intermediate	—	—	—	—	—	—	—
Military	—	—	—	—	—	—	—
P&W 4062 <sup>c</sup>							
Idle	—	—	—	—	—	—	—
Approach	—	—	—	—	—	—	—
Climbout	—	—	—	—	—	—	—
Take-off	—	—	—	—	—	—	—

<sup>a</sup> Data are for 1 engine. The MQ-9 and RQ-4 have 1 engine each.<sup>b</sup> Data for the RQ-4A from Air Emissions Factor Guide to Air Force Mobile Sources (AFCEC 2013).<sup>c</sup> ICAO Engine Exhaust Emissions Data Bank – Subsonic Engines – (ICAO 2013)

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, ICAO = International Civil Aviation Organization, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, P&W = Pratt & Whitney, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-2. Land and Take-off/Touch and Go Times in Modes and Fuel Usages – RQ-4 and KC-46A Aircraft**

Aircraft/Mode (Engine Throttle Setting)	LTO			TGO	
	Time in Mode (TIM)		Fuel Usage (Pounds) <sup>a</sup>	TIM (Hours)	Fuel Usage (Pounds) <sup>a</sup>
	(Minutes)	(Hours)			
RQ-4 Global Hawk <sup>b</sup>					
Taxi Out (Idle)	9.2	0.15	66	–	–
Take-off (Military)	0.5	0.01	25	0.01	25
Climbout (Intermediate)	1.4	0.02	59	0.02	59
Approach	4.0	0.07	63	0.07	63
Taxi In (Idle)	6.7	0.11	48	–	–
Totals	21.8	0.36	261	0.10	147
KC-46A <sup>c</sup>					
Taxi Out (Idle)	32.8	0.55	1,818	–	–
Take-off (Military)	0.7	0.01	505	0.01	505
Climbout (Intermediate)	1.6	0.03	900	0.03	900
Approach	5.2	0.09	988	0.09	988
Taxi In (Idle)	14.9	0.25	826	–	–
Totals	55.2	0.92	5,037	0.13	2,393

<sup>a</sup> Fuel usage per aircraft for the RQ-4 as no data available for the MQ-9.

<sup>b</sup> TIM data from Table 2-4 for trainer-turbine, USAF general (AFCEC 2013).

<sup>c</sup> TIM data from Table 2-4 for the KC-135 (AFCEC 2013).

**Key:** – = No activity, LTO = landing and takeoff, TGO = touch and go, TIM = Time in Mode, USAF = United States Air Force.

**Table D.3-3. Total Fuel Usage and Emissions PER LTO/TGO Cycle – RQ-4 and KC-46A Aircraft**

Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
LTO											
RQ-4 Global Hawk	261	0.4	2.2	2.5	0.3	0.1	0.1	839	0.02	0.03	847
KC-46A	5,037	33.2	115.3	62.7	5.3	0.4	0.4	16,199	0.45	0.50	16,365
TGO											
RQ-4 Global Hawk	147	0.1	0.3	2.0	0.2	0.0	0.0	474	0.01	0.01	479
KC-46A	2,393	0.2	2.7	52.7	2.5	0.2	0.1	7,695	0.21	0.24	7,773
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
LTO											
RQ-4 Global Hawk	261	0.017	0.009	0.007	0.007	0.000	0.000	0.000	0.000	0.000	0.000
KC-46A	5,037	—	—	—	—	—	—	—	—	—	—
TGO											
RQ-4 Global Hawk	147	0.003	0.002	0.001	0.001	0.000	0.000	0.000	0.000	0.000	0.000
KC-46A	2,393	—	—	—	—	—	—	—	—	—	—
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Cumene	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol
LTO											
RQ-4 Global Hawk	261	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.047	0.000	0.007
KC-46A	5,037	—	—	—	—	—	—	—	—	—	—
TGO											
RQ-4 Global Hawk	147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.009	0.000	0.001
KC-46A	2,393	—	—	—	—	—	—	—	—	—	—
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene
LTO											
RQ-4 Global Hawk	261	0.000	0.000	0.000	0.002	0.003	0.000	0.003	0.001	0.000	0.000
KC-46A	5,037	—	—	—	—	—	—	—	—	—	—
TGO											
RQ-4 Global Hawk	147	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
KC-46A	2,393	—	—	—	—	—	—	—	—	—	—
Aircraft/Mode	Fuel Usage (Pounds)	Emissions (Pounds)									
		Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4 Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene			
LTO											
RQ-4 Global Hawk	261	0.002	0.000	0.000	0.000	0.000	0.001	0.001			
KC-46A	5,037	—	—	—	—	—	—	—			
TGO											
RQ-4 Global Hawk	147	0.000	0.000	0.000	0.000	0.000	0.000	0.000			
KC-46A	2,393	—	—	—	—	—	—	—			

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LTO = landing and takeoff, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, TGO = touch and go, VOC = volatile organic compound.

**Table D.3-4. Annual Air Operations for Aircraft at Altus AFB – Year 2008**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
C-17	17,052	35,092	–	35,092	87,236
KC-135	6,702	44,520	–	44,520	95,742
Transient	195	–	–	–	195

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** 2008 Mobile Source Air Emissions Inventory for Grand Forks Air Force Base (Weston Solutions, Inc. 2008).

**Table D.3-5. Annual Air Operations for Aircraft at Grand Forks AFB – Year 2012**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
MQ-9 Reaper	416	–	–	6,734	7,150
RQ-4 Global Hawk	130	–	–	65	195
Transient	128	–	–	–	128

**Key:** – = No activity, LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** SAIC 2013j.

**Table D.3-6. Existing Aircraft Closed Pattern Operations at Grand Forks AFB – KC-46A Proposed Scenarios**

Aircraft Type/Operation	Operations per Year	Engine Setting/Time in Mode (Minutes)				Engine Setting Annual Hours			
		Approach	Intermediate	Climbout	Takeoff	Approach	Intermediate	Climbout	Takeoff
MQ-9 Reaper/RQ-4 Global Hawk									
Closed Pattern - Radar & Initial to Overhead	3,400	12.0	2.0	–	1.0	680	113	–	57
Closed Pattern - VFR	3,400	5.0	2.0	–	1.0	283	113	–	57
Closed Pattern - Tactical	–	8.0	2.0	2.0	1.0	–	–	–	–
Total TIMs						963	227	–	113

**Key:** – = No activity, TIM = Time in Mode, VFR = visual flight rules.

**Table D.3-7. Annual Air Emissions from Existing Aircraft Operations – Grand Forks AFB Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	0.79	2.90	1.80	0.18	0.44	0.44	330	0.01	0.01	333
<b>Grand Forks Year 2012 - LTOs</b>										
MQ-9 Reaper/RQ-4 Global Hawk	0.10	0.61	0.67	0.08	0.01	0.01	229	0.01	0.01	231
Transient Aircraft Operations	0.52	1.90	1.18	0.12	0.29	0.29	217	0.01	0.01	219
<b>Subtotal - Year 2012 LTOs</b>	<b>0.62</b>	<b>2.52</b>	<b>1.86</b>	<b>0.19</b>	<b>0.30</b>	<b>0.30</b>	<b>446</b>	<b>0.01</b>	<b>0.01</b>	<b>450</b>
<b>2012 Closed Patterns - Reaper/Global Hawk</b>										
Approach	0.32	1.49	3.54	0.48	0.10	0.10	1,467	0.04	0.05	1,482
Intermediate	0.09	0.24	5.00	0.30	0.07	0.07	923	0.03	0.03	932
Military	0.05	0.14	3.51	0.18	0.05	0.05	550	0.02	0.02	556
Transient Aircraft Operations	–	–	–	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.46</b>	<b>1.87</b>	<b>12.05</b>	<b>0.97</b>	<b>0.22</b>	<b>0.22</b>	<b>2,940</b>	<b>0.08</b>	<b>0.09</b>	<b>2,970</b>
<b>Total Year 2012</b>	<b>1.08</b>	<b>4.39</b>	<b>13.91</b>	<b>1.16</b>	<b>0.52</b>	<b>0.52</b>	<b>3,386</b>	<b>0.09</b>	<b>0.11</b>	<b>3,420</b>
<b>Total UAS Operations</b>	<b>0.56</b>	<b>2.48</b>	<b>12.73</b>	<b>1.04</b>	<b>0.23</b>	<b>0.23</b>	<b>3,169</b>	<b>0.09</b>	<b>0.10</b>	<b>3,201</b>
<b>Total Transient Aircraft Operations</b>	<b>0.52</b>	<b>1.90</b>	<b>1.18</b>	<b>0.12</b>	<b>0.29</b>	<b>0.29</b>	<b>217</b>	<b>0.01</b>	<b>0.01</b>	<b>219</b>

**Table D.3-7. Annual Air Emissions from Existing Aircraft Operations –  
Grand Forks AFB Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	Acetalde- hyde	Acrolein	Benzene	1,3- Butadiene	Carbon Disulfide	Carbon Tetra- chloride	Chloroform	Chloro- methane	o-Cresol	p-Cresol
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	0.002	0.002	0.003	–	–	–	–	–	–	–
<b>Grand Forks Year 2012 - LTOs</b>										
MQ-9 Reaper/RQ-4 Global Hawk	0.005	0.003	0.002	0.002	–	–	–	–	–	–
Transient Aircraft Operations	0.001	0.001	0.002	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 LTOs</b>	<b>0.006</b>	<b>0.004</b>	<b>0.004</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>2012 Closed Patterns - Reaper/Global Hawk</b>										
Approach	0.014	0.008	0.005	0.005	–	–	–	–	–	–
Intermediate	0.004	0.002	0.001	0.001	–	–	–	–	–	–
Military	0.002	0.001	0.001	0.001	–	–	–	–	–	–
Transient Aircraft Operations	–	–	–	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>0.020</b>	<b>0.011</b>	<b>0.008</b>	<b>0.008</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total Year 2012</b>	<b>0.026</b>	<b>0.015</b>	<b>0.012</b>	<b>0.010</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total UAS Operations</b>	<b>0.024</b>	<b>0.014</b>	<b>0.010</b>	<b>0.010</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Total Transient Aircraft Operations</b>	<b>0.001</b>	<b>0.001</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
Scenario/Source	Annual Emissions - Tons									
	Cumene	Dibenzo- furan	Dibutyl Phthalate	1,2- Dichloro- propane	2,4-Dinitro- phenol	DEHP	Ethyl- benzene	Formalde- hyde	Hexane	Methanol
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	–	–	–	–	–	–	0.000	0.012	–	–
<b>Grand Forks Year 2012 - LTOs</b>										
MQ-9 Reaper/RQ-4 Global Hawk	–	–	–	–	–	–	0.000	0.013	–	0.002
Transient Aircraft Operations	–	–	–	–	–	–	0.000	0.008	–	–
<b>Subtotal - Year 2012 LTOs</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.021</b>	<b>–</b>	<b>0.002</b>
<b>2012 Closed Patterns - Reaper/Global Hawk</b>										
Approach	–	–	–	–	–	–	0.001	0.040	–	0.006
Intermediate	–	–	–	–	–	–	0.000	0.011	–	0.002
Military	–	–	–	–	–	–	0.000	0.006	–	0.001
Transient Aircraft Operations	–	–	–	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.057</b>	<b>–</b>	<b>0.008</b>
<b>Total Year 2012</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.078</b>	<b>–</b>	<b>0.010</b>
<b>Total UAS Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.070</b>	<b>–</b>	<b>0.010</b>
<b>Total Transient Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.008</b>	<b>–</b>	<b>–</b>

**Table D.3-7. Annual Air Emissions from Existing Aircraft Operations – Grand Forks AFB Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene
<b>Altus AFB - Year 2008</b>										
Transient Aircraft Operations	–	–	–	0.001	–	–	–	0.001	–	–
<b>Grand Forks Year 2012 - LTOs</b>										
MQ-9 Reaper/RQ-4 Global Hawk	–	–	–	0.001	0.001	–	0.001	0.000	–	–
Transient Aircraft Operations	–	–	–	0.001	0.000	–	–	0.000	–	–
<b>Subtotal - Year 2012 LTOs</b>	–	–	–	0.001	0.001	–	0.001	0.001	–	–
<b>2012 Closed Patterns - Reaper/Global Hawk</b>										
Approach	–	–	–	0.002	0.002	–	0.002	0.001	–	–
Intermediate	–	–	–	0.000	0.001	–	0.001	0.000	–	–
Military	–	–	–	0.000	0.000	–	0.000	0.000	–	–
Transient Aircraft Operations	–	–	–	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	–	–	–	0.002	0.003	–	0.003	0.001	–	–
<b>Total Year 2012</b>	–	–	–	0.003	0.004	–	0.004	0.002	–	–
<b>Total UAS Operations</b>	–	–	–	0.003	0.004	–	0.004	0.002	–	–
<b>Total Transient Aircraft Operations</b>	–	–	–	0.001	–	–	–	0.000	–	–

Scenario/Source	Annual Emissions - Tons						
	Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4 Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Altus AFB - Year 2008</b>							
Transient Aircraft Operations	0.002	–	–	–	–	–	–
<b>Grand Forks Year 2012 - LTOs</b>							
MQ-9 Reaper/RQ-4 Global Hawk	0.001	–	–	–	–	0.000	0.000
Transient Aircraft Operations	0.001	–	–	–	–	–	–
<b>Subtotal - Year 2012 LTOs</b>	0.002	–	–	–	–	0.000	0.000
<b>2012 Closed Patterns - Reaper/Global Hawk</b>							
Approach	0.002	–	–	–	–	0.001	0.001
Intermediate	0.001	–	–	–	–	0.000	0.000
Military	0.000	–	–	–	–	0.000	0.000
Transient Aircraft Operations	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Closed Patterns</b>	0.003	–	–	–	–	0.001	0.001
<b>Total Year 2012</b>	0.004	–	–	–	–	0.002	0.001
<b>Total UAS Operations</b>	0.003	–	–	–	–	0.002	0.001
<b>Total Transient Aircraft Operations</b>	0.001	–	–	–	–	–	–

**Key:** – = Source does not emit particular pollutant, AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LTO = landing and takeoff, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, UAS = Unmanned Aircraft System, VOC = volatile organic compound.

**Table D.3-8. Annual Average Nonroad Emission Factors – Fairchild AFB and Grand Forks AFB**

Hp Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>Year 2012 - Fairchild AFB</b>										
Nonroad Equipment - 25-40 Hp	0.70	3.43	4.87	0.13	0.50	0.46	609	0.094	0.007	613
Nonroad Equipment - 41-50 Hp	0.50	2.56	4.93	0.13	0.45	0.41	610	0.094	0.007	614
Nonroad Equipment - 51-75 Hp	0.48	2.52	4.90	0.13	0.44	0.40	611	0.094	0.007	615
Nonroad Equipment - 76-100 Hp	0.52	3.68	4.61	0.13	0.53	0.49	607	0.094	0.007	611
Nonroad Equipment - 101-175 Hp	0.54	3.92	4.58	0.13	0.61	0.56	608	0.094	0.007	612
Nonroad Equipment - 176-300 Hp	0.38	1.72	4.09	0.11	0.38	0.35	547	0.094	0.007	551
<b>Year 2016 Grand Forks AFB</b>										
Nonroad Equipment - 101-175 Hp	0.38	2.75	3.11	0.12	0.46	0.42	608	0.094	0.007	613

<sup>a</sup> Factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Spokane County 2012 and Grand Forks County 2016.

**Key:** AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2e</sub> = carbon dioxide equivalent, EPA = Environmental Protection Agency, Hp = horsepower, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-9. Annual Air Emissions for Existing AGE Usages – Grand Forks AFB KC-46A Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2e</sub>
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.04	0.17	0.24	0.01	0.03	0.02	30.48	0.00	0.00	31
76-100 Hp	0.00	0.00	0.00	0.00	0.00	0.00	0.26	0.00	0.00	0
101-175 Hp	1.20	8.70	10.17	0.29	1.35	1.25	1,349.72	0.21	0.01	1,359
176-300 Hp	0.00	0.02	0.04	0.00	0.00	0.00	4.91	0.00	0.00	5
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>1.24</b>	<b>8.89</b>	<b>10.45</b>	<b>0.30</b>	<b>1.38</b>	<b>1.27</b>	<b>1,385.37</b>	<b>0.21</b>	<b>0.02</b>	<b>1,395</b>
<b>Subtotal - Year 2012 Grand Forks AFB<sup>a</sup></b>	<b>0.06</b>	<b>0.44</b>	<b>0.52</b>	<b>0.01</b>	<b>0.07</b>	<b>0.06</b>	<b>69.27</b>	<b>0.01</b>	<b>0.00</b>	<b>70</b>
<b>Subtotal - Year 2016 Grand Forks AFB<sup>b</sup></b>	<b>0.04</b>	<b>0.31</b>	<b>0.35</b>	<b>0.01</b>	<b>0.05</b>	<b>0.05</b>	<b>69.33</b>	<b>0.01</b>	<b>0.00</b>	<b>70</b>
Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.003	0.00	0.00	0.00	–	–	–	–	–	–
76-100 Hp	0.000	0.00	0.00	0.00	–	–	–	–	–	–
101-175 Hp	0.089	0.01	0.02	0.00	–	–	–	–	–	–
176-300 Hp	0.000	0.00	0.00	0.00	–	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>0.092</b>	<b>0.01</b>	<b>0.025</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2012 Grand Forks AFB<sup>a</sup></b>	<b>0.005</b>	<b>0.001</b>	<b>0.001</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 Grand Forks AFB<sup>b</sup></b>	<b>0.003</b>	<b>0.001</b>	<b>0.001</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.3-9. Annual Air Emissions for Existing AGE Usages – Grand Forks AFB  
KC-46A Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	<i>Cumene</i>	<i>Dibenzo-furan</i>	<i>Dibutyl Phthalate</i>	<i>1,2-Dichloro-propane</i>	<i>2,4-Dinitro-phenol</i>	<i>DEHP</i>	<i>Ethyl-benzene</i>	<i>Formalde-hyde</i>	<i>Hexane</i>	<i>Methanol</i>
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	–	–	0.00	0.01	0.00	–	–	–	–	–
76-100 Hp	–	–	0.00	0.00	0.00	–	–	–	–	–
101-175 Hp	–	–	0.00	0.18	0.00	–	–	–	–	–
176-300 Hp	–	–	0.00	0.00	0.00	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	–	–	<b>0.00</b>	<b>0.19</b>	<b>0.00</b>	–	–	–	–	–
<b>Subtotal - Year 2012 Grand Forks AFB<sup>a</sup></b>	–	–	<b>0.000</b>	<b>0.009</b>	<b>0.00</b>	–	–	–	–	–
<b>Subtotal - Year 2016 Grand Forks AFB<sup>b</sup></b>	–	–	<b>0.000</b>	<b>0.007</b>	<b>0.00</b>	–	–	–	–	–

Scenario/Source	Annual Emissions - Tons									
	<i>Methylene Chloride</i>	<i>MIBK</i>	<i>MTBE</i>	<i>Naphth-alene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propionald-ehyde</i>	<i>Styrene</i>	<i>1,1,2,2-Tetra-chloro-ethane</i>	<i>Tetrachlor-oethene</i>
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.00	0.00	0.00	–	–	0.00	–	–	0.00	0.00
76-100 Hp	0.00	0.00	0.00	–	–	0.00	–	–	0.00	0.00
101-175 Hp	0.00	0.01	0.00	–	–	0.02	–	–	0.00	0.01
176-300 Hp	0.00	0.00	0.00	–	–	0.00	–	–	0.00	0.00
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	–	–	<b>0.02</b>	–	–	<b>0.00</b>	<b>0.013</b>
<b>Subtotal - Year 2012 Grand Forks AFB<sup>a</sup></b>	<b>0.000</b>	<b>0.001</b>	<b>0.000</b>	–	–	<b>0.001</b>	–	–	<b>0.00</b>	<b>0.001</b>
<b>Subtotal - Year 2016 Grand Forks AFB<sup>b</sup></b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	–	–	<b>0.001</b>	–	–	<b>0.00</b>	<b>0.000</b>

Scenario/Source	Annual Emissions - Tons						
	<i>Toluene</i>	<i>1,1,1-Trichloro-ethane</i>	<i>Trichloro-ethene</i>	<i>2,2,4 Trimethyl-pentane</i>	<i>Vinyl Acetate</i>	<i>mp-Xylene</i>	<i>o-Xylene</i>
<b>Year 2012 - Fairchild AFB</b>							
10-50 Hp	–	–	–	–	–	–	–
76-100 Hp	–	–	–	–	–	–	–
101-175 Hp	–	–	–	–	–	–	–
176-300 Hp	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	–	–	–	–	–	–	–
<b>Subtotal - Year 2012 Grand Forks AFB<sup>a</sup></b>	–	–	–	–	–	–	–
<b>Subtotal - Year 2016 Grand Forks AFB<sup>b</sup></b>	–	–	–	–	–	–	–

<sup>a</sup> 2012 Grand Forks AGE emissions = 5% of those for Fairchild.

<sup>b</sup> 2016 Grand Forks AGE emissions = 2012 Grand Forks AGE emissions \* (2016 Grand Forks AGE nonroad Efs/2012 Fairchild nonroad EFs).

**Key:** – = Source does not emit particular pollutant, AFB = Air Force Base, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, Efs = emission factors, Hp = horsepower, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-10. Annual Emissions from GMV Activities – Grand Forks AFB  
KC-46A Scenarios**

Scenario/Vehicle Class	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012 Fairchild AFB</b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.04	0.22	0.92	0.00	0.05	0.04	167.46	0.00	0.00	167
Gasoline Vehicles	0.01	0.52	0.09	0.00	0.00	0.00	48.09	0.00	0.00	48
<b>Total</b>	<b>0.05</b>	<b>0.74</b>	<b>1.01</b>	<b>0.00</b>	<b>0.05</b>	<b>0.04</b>	<b>215.55</b>	<b>0.00</b>	<b>0.00</b>	<b>215.59</b>
<b>Year 2016 Fairchild AFB MOB 1</b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.02	0.14	0.61	0.00	0.03	0.03	180.05	0.00	0.00	180
Gasoline Vehicles	0.01	0.49	0.08	0.00	0.00	0.00	47.63	0.00	0.00	48
<b>Total</b>	<b>0.03</b>	<b>0.64</b>	<b>0.69</b>	<b>0.00</b>	<b>0.04</b>	<b>0.03</b>	<b>227.67</b>	<b>0.00</b>	<b>0.00</b>	<b>227.71</b>
<b>Year 2012 Grand Forks AFB</b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.02	0.09	0.40	0.00	0.02	0.02	72.12	0.00	0.00	72.13
Gasoline Vehicles	0.01	0.22	0.04	0.00	0.00	0.00	20.71	0.00	0.00	20.72
<b>Total</b>	<b>0.02</b>	<b>0.32</b>	<b>0.43</b>	<b>0.00</b>	<b>0.02</b>	<b>0.02</b>	<b>92.83</b>	<b>0.00</b>	<b>0.00</b>	<b>92.85</b>
<b>Year 2016 Grand Forks AFB MOB 1</b>										
Alternative-Fueled Vehicles	–	–	–	–	–	–	–	–	–	–
Diesel Vehicles	0.02	0.10	0.42	0.00	0.02	0.02	122.27	0.00	0.00	122.29
Gasoline Vehicles	0.01	0.33	0.05	0.00	0.00	0.00	32.34	0.00	0.00	32.35
<b>Total</b>	<b>0.02</b>	<b>0.43</b>	<b>0.47</b>	<b>0.00</b>	<b>0.03</b>	<b>0.02</b>	<b>154.61</b>	<b>0.00</b>	<b>0.00</b>	<b>154.64</b>

**Note:** Grand Fork GMV emissions for 2012 and 2016 = Fairchild GMV emissions \* Grand Fork scenario worker fraction of Fairchild for each year.

**Key:** – = Source does not emit particular pollutant, AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMV = government motor vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-11. Annual Number of Workers –  
Grand Forks/Fairchild AFB KC-46A Project Scenarios**

Scenario	Total # of Workers
Year 2012 - Fairchild AFB	5,835
Year 2012 - Grand Forks AFB	2,513
Year 2016 - Fairchild AFB MOB 1	6,273
Year 2016 - Grand Forks AFB MOB 1	4,260

**Key:** AFB = Air Force Base, MOB 1 = First Main Operating Base.

**Table D.3-12. Annual On Base On-Road Vehicle Mileage  
Calculations – Grand Forks AFB KC-46A Project Scenarios**

Scenario	# of Workers	Vehicle Occupancy Rate	On-Base Miles per Round Trip <sup>a</sup>	On-Base Miles per Day	On-Base Miles per year <sup>b</sup>
Year 2012	2,513	0.95	6.00	14,324	3,724,266
Year 2016 MOB 1	4,260	0.95	6.00	24,282	6,313,320
MOB 1 Only	1,747	0.95	6.00	9,958	2,589,054

<sup>a</sup> Source: Grand Forks AFB

<sup>b</sup> Based on 260 days per year.

**Key:** AFB = Air Force Base, MOB 1 = First Main Operating Base.

**Table D.3-13. Annual Average On-Road Emission Factors – Grand Forks AFB  
KC-46A Proposed Actions**

Project Year/ Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012										
LDGV - Road 3	0.06	2.43	0.43	0.00	0.02	0.01	321	0.00	0.00	321
HDDV - Road 3	0.42	2.51	10.27	0.01	0.56	0.50	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.07	2.43	0.62	0.00	0.03	0.02	353.61	0.00	0.00	354
Year 2016 FTU										
LDGV - Road 3	0.03	1.82	0.21	0.00	0.02	0.01	302	0.00	0.00	302
HDDV - Road 3	0.25	1.57	6.75	0.01	0.36	0.30	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.03	1.81	0.34	0.00	0.03	0.02	335.20	0.00	0.00	335

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Grand Forks County

<sup>b</sup> Equal to 98/2% LDGV/HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-14. Annual Emissions from On Base On-Road Vehicle Activities –  
Grand Forks AFB KC-46A Scenarios**

Scenario Year/Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012	0.28	9.96	2.56	0.02	0.14	0.09	1,451.66	0.00	0.00	1,451.82
Year 2016 MOB 1	0.24	12.63	2.38	0.03	0.20	0.12	2,332.71	0.00	0.00	2,333.07

**Note:** Assumes that 2% of the fleet is HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, HDDV = heavy duty diesel vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-15. Annual Off Base On-Road Vehicle Mileage  
Calculations – Grand Forks AFB KC-46A Project Scenarios**

Scenario	# of Workers	Vehicle Occupancy Rate	Off Base Miles per 1-Way Trip <sup>a</sup>	Off Base Miles per Day	Off Base Miles per year <sup>b</sup>
Year 2012	2,513	0.95	20	95,494	24,828,440
Year 2016 MOB 1	4,260	0.95	20	161,880	42,088,800
MOB 1 Only	1,747	0.95	20	33,193	8,630,180

<sup>a</sup> Source: Grand Forks AFB

<sup>b</sup> Based on 260 days per year.

**Key:** # = number, AFB = Air Force Base, MOB 1 = First Main Operating Base.

**Table D.3-16. Annual Average On-Road Emission Factors – Grand Forks AFB  
KC-46A Proposed Actions**

Project Year/Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.43	0.43	0.00	0.02	0.01	321	0.001	0.0001	321
LDGV - Road 5	0.09	3.12	0.45	0.01	0.04	0.02	397	0.001	0.0002	397
LDGV - Composite <sup>b</sup>	0.08	3.02	0.44	0.01	0.04	0.02	386	0.001	0.000	386
HDDV - Road 3	0.42	2.51	10.27	0.01	0.56	0.50	1,949	0.000	0.000	1,949
HDDV - Road 5	0.66	3.67	12.66	0.02	1.00	0.83	2,426	0.000	0.000	2,426
HDDV - Composite <sup>b</sup>	0.62	3.50	12.30	0.02	0.93	0.78	2,355	0.000	0.000	2,355
<b>Year 2016 FTU</b>										
LDGV - Road 3	0.03	1.82	0.21	0.00	0.02	0.01	302	0.001	0.0001	302
LDGV - Road 5	0.38	2.34	0.22	0.01	0.04	0.17	374	0.001	0.0002	374
LDGV - Composite <sup>b</sup>	0.29	2.21	0.21	0.01	0.03	0.13	356	0.001	0.000	356
HDDV - Road 3	0.25	1.57	6.75	0.01	0.36	0.30	1,949	0.000	0.000	1,949
HDDV - Road 5	0.40	2.29	8.39	0.02	0.67	0.51	2,427	0.000	0.000	2,427
HDDV - Composite <sup>b</sup>	0.37	2.11	7.98	0.02	0.59	0.46	2,307	0.000	0.000	2,307

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Jackson County

<sup>b</sup> Equal to 15/85% road 3/road 5 conditions.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-17. Annual Emissions from Off-Base Vehicle Activities – Grand Forks AFB  
KC-46A Scenarios**

Scenario Year/Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV	2.19	80.88	11.93	0.15	1.01	0.48	10,352.20	0.02	0.00	10,353.94
HDDV	0.34	1.91	6.73	0.01	0.51	0.43	1,288.84	0.00	0.00	1,288.84
<b>Total</b>	<b>2.53</b>	<b>82.80</b>	<b>18.66</b>	<b>0.16</b>	<b>1.52</b>	<b>0.91</b>	<b>11,641.04</b>	<b>0.02</b>	<b>0.00</b>	<b>11,642.78</b>
<b>Year 2016 MOB 1</b>										
LDGV	13.30	100.34	9.74	0.24	1.54	5.85	16,175.90	0.03	0.01	16,178.63
HDDV	0.34	1.95	7.40	0.02	0.55	0.42	2,140.79	0.00	0.00	2,140.79
<b>Total</b>	<b>13.64</b>	<b>102.30</b>	<b>17.14</b>	<b>0.26</b>	<b>2.09</b>	<b>6.28</b>	<b>18,316.69</b>	<b>0.03</b>	<b>0.01</b>	<b>18,319.42</b>

**Note:** Assumes that 2% of the fleet is HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-18. Annual Mobile Fuel Transfer VOC Emissions – Grand Forks AFB  
KC-46A Scenarios**

Scenario	Tons per Year									
	VOC	Benzene	Cumene	Ethylbenzene	Hexane	MTBE	Naphthalene	Toluene	2,2,4 Trimethylpentane	Xylenes
Year 2011 - Grand Forks AFB <sup>b</sup>	0.03	0.0002	0.0001	0.0001	0.0000	0.0002	0.0000	0.0004	0.0000	0.0006
Year 2012 - Grand Forks AFB	0.04	0.0002	0.0001	0.0001	0.0000	0.0002	0.0000	0.0004	0.0000	0.0006
Year 2016 MOB 1 - from Fairchild AFB	0.36	0.0025	0.0012	0.0010	0.0003	0.0020	0.0000	0.0045	0.0004	0.0068

<sup>a</sup> Future year emissions = 2011 emissions \* future year fraction of 2011 worker population.

<sup>b</sup> Source: 2011 Actual and Potential Air Emissions Inventory for GFAFB (Sullivan-Weston Services JVA, LLC 2012)

**Key:** AFB = Air Force Base, MOB 1 = First Main Operating Base, VOC = volatile organic compound.

**Table D.3-19. Annual Number of Workers – Grand Forks AFB KC-46A Project Scenarios**

Scenario	# of Workers
Year 2011	2,275
Year 2012	2,513
Year 2016 MOB 1	4,260

**Key:** # = number, MOB 1 = First Main Operating Base.

**Table D.3-20. Annual Emissions from Point and Area Sources – Grand Forks AFB KC-46A Scenarios**

Scenario Year/Source Type	Tons per Year						
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
Year 2011 <sup>a</sup>	20.27	11.40	15.00	0.09	7.20	1.20	–
Year 2012	22.39	12.59	16.57	0.10	7.95	1.33	–
Year 2016 MOB 1	37.95	21.35	28.09	0.17	13.48	2.25	–

Scenario Year/Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
Year 2011 <sup>a</sup>	0.000	–	0.083	–	0.002	–	–	–	–	–
Year 2012	0.000	–	0.092	–	0.002	–	–	–	–	–
Year 2016 MOB 1	0.000	–	0.155	–	0.003	–	–	–	–	–

Scenario Year/Source Type	Tons per Year									
	Cumene	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	Hexane	Methanol	Methylene Chloride	MIBK	MTBE
Year 2011 <sup>a</sup>	0.003	–	–	–	–	0.316	0.001	0.052	0.009	0.312
Year 2012	0.003	–	–	–	–	0.349	0.001	0.057	0.009	0.344
Year 2016 MOB 1	0.006	–	–	–	–	0.592	0.001	0.096	0.016	0.583

Scenario Year/Source Type	Tons per Year										
	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Trichloroethene	o-Xylene
Year 2011 <sup>a</sup>	0.037	–	0.000	–	0.000	0.008	–	0.739	–	–	0.104
Year 2012	0.041	–	0.000	–	0.000	0.009	–	0.816	–	–	0.114
Year 2016 MOB 1	0.069	–	0.000	–	0.000	0.015	–	1.384	–	–	0.194

<sup>a</sup> Source: 2011 Actual and Potential Air Emissions Inventory for GFAFB (Sullivan-Weston Services JVA, LLC 2012). Excludes fuel transfer VOCs, as these accounted for in separate section.

**Key:** – = Source does not emit particular pollutant, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.3-21. Annual Emissions for Existing Operations at Grand Forks AFB – Year 2012**

Source Type	Tons per Year									
	VOC	CO	NOX	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
UAS Operations	0.56	2.48	12.73	1.04	0.23	0.23	3,169	0.09	0.10	2,910
Transient Aircraft Operations	0.52	1.90	1.18	0.12	0.29	0.29	217	0.01	0.01	199
On-Wing Aircraft Engine Testing - UASs	0.17	0.71	0.80	0.10	0.02	0.02	285	0.01	0.01	262
Aerospace Ground Support Equipment	0.06	0.44	0.52	0.01	0.07	0.06	69	0.01	0.00	63
GMVs/Nonroad Equipment	0.02	0.32	0.43	0.00	0.02	0.02	93	0.00	0.00	84
Privately-Owned Vehicles - On-Base	0.28	9.96	2.56	0.02	0.14	0.09	1,452	0.00	0.00	1,320
Privately-Owned Vehicles - Off-Base	2.53	82.80	18.66	0.16	1.52	0.91	11,641	0.02	0.00	10,584
Mobile Fuel Transfer Operations	0.04	–	–	–	–	–	–	–	–	–
Point and Area Sources	22.39	12.59	16.57	0.10	7.95	1.33	–	–	–	–
<b>Total Emissions</b>	<b>37.47</b>	<b>111.21</b>	<b>53.46</b>	<b>1.56</b>	<b>10.24</b>	<b>2.95</b>	<b>16,926</b>	<b>0.14</b>	<b>0.12</b>	<b>15,423</b>

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
UAS Operations	0.024	0.014	0.010	0.010	–	–	–	–	–	–
Transient Aircraft Operations	0.001	0.001	0.002	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UASs	0.011	0.006	0.004	0.004	–	–	–	–	–	–
Aerospace Ground Support Equipment	0.005	0.001	0.001	0.000	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.000	–	–	–	–	–	–	–
Point and Area Sources	0.000	0.000	0.092	–	0.002	–	–	–	–	–
<b>Total Emissions</b>	<b>0.041</b>	<b>0.022</b>	<b>0.109</b>	<b>0.014</b>	<b>0.002</b>	–	–	–	–	–

Source Type	Tons per Year									
	Cumene	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol
UAS Operations	–	–	–	–	–	–	0.001	0.070	–	0.010
Transient Aircraft Operations	–	–	–	–	–	–	0.000	0.008	–	–
On-Wing Aircraft Engine Testing - UASs	–	–	–	–	–	–	0.000	0.030	–	0.004
Aerospace Ground Support Equipment	–	–	0.000	0.009	0.000	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.00	–	–	–	–	–	0.00	–	0.00	–
Point and Area Sources	0.003	–	–	–	–	–	0.032	0.012	0.349	0.001
<b>Total Emissions</b>	<b>0.003</b>	–	<b>0.000</b>	<b>0.009</b>	<b>0.000</b>	–	<b>0.034</b>	<b>0.120</b>	<b>0.349</b>	<b>0.015</b>

**Table D.3-21. Annual Emissions for Existing Operations at Grand Forks AFB – Year 2012  
(Continued)**

Source Type	Tons per Year									
	Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene
UAS Operations	–	–	–	0.003	0.004	–	0.004	0.002	–	–
Transient Aircraft Operations	–	–	–	0.001	–	–	–	0.000	–	–
On-Wing Aircraft Engine Testing - UASs	–	–	–	0.001	0.002	–	0.002	0.001	–	–
Aerospace Ground Support Equipment	0.000	0.001	0.000	–	–	0.001	–	–	–	0.001
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	0.00	–	–	–	–	–	–
Point and Area Sources	0.057	0.009	0.344	0.041	–	0.000	–	0.000	0.009	–
<b>Total Emissions</b>	<b>0.057</b>	<b>0.010</b>	<b>0.344</b>	<b>0.046</b>	<b>0.006</b>	<b>0.001</b>	<b>0.006</b>	<b>0.003</b>	<b>0.009</b>	<b>0.001</b>

Source Type	Tons per Year						
	Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4 Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
UAS Operations	0.003	–	–	–	–	0.002	0.001
Transient Aircraft Operations	0.001	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UASs	0.001	–	–	–	–	0.001	0.000
Aerospace Ground Support Equipment	–	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	0.00	–	0.00	–	–	0.00
Point and Area Sources	0.816	–	–	0.060	–	–	0.114
<b>Total Emissions</b>	<b>0.822</b>	<b>0.000</b>	–	<b>0.060</b>	–	<b>0.002</b>	<b>0.117</b>

**Key:** – = Source does not emit particular pollutant, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMV = government motor vehicle, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, UAS = Unmanned Aircraft System, VOC = volatile organic compound.

**Table D.3-22. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Grand Forks AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-46A Aircraft Operations	50.07	201.74	837.57	45.42	2.92	2.49	136,814	3.79	4.25	125,648
On-Wing Aircraft Engine Testing - KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,844	0.19	0.21	6,286
Aerospace Ground Support Equipment - KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	937.05	0.14	0.01	857.54
UAS Operations	0.56	2.48	12.73	1.04	0.23	0.23	3,169	0.09	0.10	2,910
Transient Aircraft	0.52	1.90	1.18	0.12	0.29	0.29	217	0.01	0.01	199
On-Wing Aircraft Engine Testing - UASs	0.17	0.71	0.80	0.10	0.02	0.02	285	0.01	0.01	262
AGE - Existing Aircraft	0.04	0.31	0.35	0.01	0.05	0.05	69	0.01	0.00	63
Government Motor Vehicles	0.02	0.43	0.47	0.00	0.03	0.02	155	0.00	0.00	141
Privately-Owned Vehicles - On-Base	0.24	12.63	2.38	0.03	0.20	0.12	2,333	0.00	0.00	2,121
Privately-Owned Vehicles - Off-Base	13.64	102.30	17.14	0.26	2.09	6.28	18,317	0.03	0.01	16,654
Mobile Fuel Transfer Operations	0.36	–	–	–	–	–	–	–	–	–
Point and Area Sources	37.95	21.35	28.09	0.17	13.48	2.25	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>118.55</b>	<b>397.60</b>	<b>934.45</b>	<b>49.67</b>	<b>20.21</b>	<b>12.58</b>	<b>169,140</b>	<b>4.27</b>	<b>4.60</b>	<b>155,141</b>
<b>Year 2012 Base Case Emissions</b>	<b>(37.47)</b>	<b>(111.21)</b>	<b>(53.46)</b>	<b>(1.56)</b>	<b>(10.24)</b>	<b>(2.95)</b>	<b>(16,926)</b>	<b>(0.14)</b>	<b>(0.12)</b>	<b>(15,423)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>81.08</b>	<b>286.39</b>	<b>880.99</b>	<b>48.12</b>	<b>9.98</b>	<b>9.63</b>	<b>152,214</b>	<b>4.13</b>	<b>4.48</b>	<b>139,718</b>
<b>PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>				
<b>Fractional Increase from Existing Conditions</b>	<b>2.16</b>	<b>2.58</b>	<b>16.48</b>	<b>30.89</b>	<b>0.97</b>	<b>3.27</b>				<b>9.06</b>
<b>Grand Forks County 2008 Emissions</b>	<b>8,202</b>	<b>14,242</b>	<b>4,054</b>	<b>684</b>	<b>14,670</b>	<b>2,788</b>				<b>479,163</b>
<b>Fractional Increase from Grand Forks County Emissions</b>	<b>0.01</b>	<b>0.02</b>	<b>0.22</b>	<b>0.07</b>	<b>0.001</b>	<b>0.003</b>				<b>0.29</b>

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloroform	Chloro-methane	o-Cresol	p-Cresol
KC-46A Aircraft Operations	2.157	1.237	0.849	0.852	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-46A	0.620	0.356	0.244	0.245	–	–	–	–	–	–
Aerospace Ground Support Equipment - KC-46A	0.044	0.007	0.012	0.001	–	–	–	–	–	–
UAS Operations	0.024	0.014	0.010	0.010	–	–	–	–	–	–
Transient Aircraft	0.001	0.001	0.002	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UASs	0.011	0.006	0.004	0.004	–	–	–	–	–	–
AGE - Existing Aircraft	0.003	0.000	0.001	0.000	–	–	–	–	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	–	–	–	–	–	–	–
Point and Area Sources	0.00	–	0.16	–	0.00	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>2.861</b>	<b>1.621</b>	<b>1.280</b>	<b>1.112</b>	<b>0.003</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.041)</b>	<b>(0.022)</b>	<b>(0.109)</b>	<b>(0.014)</b>	<b>(0.002)</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.820</b>	<b>1.599</b>	<b>1.171</b>	<b>1.098</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>PSD Thresholds</b>										
<b>Fractional Increase from Existing Conditions</b>	<b>68.78</b>	<b>73.94</b>	<b>10.72</b>	<b>78.78</b>	<b>0.70</b>					
<b>Grand Forks County 2008 Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Fractional Increase from Grand Forks County Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.3-22. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Grand Forks AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Cumene	Dibenzo-furan	Dibutyl Phthalate	1,2-Dichloro-propane	2,4-Dinitro-phenol	DEHP	Ethyl-benzene	Formalde-hyde	Hexane	Methanol
KC-46A Aircraft Operations	–	–	–	–	–	–	0.088	6.216	–	0.912
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	–	–	–	0.025	1.787	–	0.262
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	–	0.002	0.088	0.001	–
UAS Operations	–	–	–	–	–	–	0.001	0.070	–	0.010
Transient Aircraft	–	–	–	–	–	–	0.000	0.008	–	–
On-Wing Aircraft Engine Testing - UASs	–	–	–	–	–	–	0.000	0.030	–	0.004
AGE - Existing Aircraft	–	–	0.000	0.006	0.000	–	–	–	–	–
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.00	–	–	–	–	–	0.00	–	0.00	–
Point and Area Sources	0.01	–	–	–	–	–	0.05	0.02	0.59	0.00
<b>Total Proposed Emissions - 2016</b>	<b>0.007</b>	<b>–</b>	<b>0.000</b>	<b>0.006</b>	<b>0.000</b>	<b>–</b>	<b>0.173</b>	<b>8.219</b>	<b>0.593</b>	<b>1.189</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.003)</b>	<b>–</b>	<b>(0.000)</b>	<b>(0.009)</b>	<b>(0.000)</b>	<b>–</b>	<b>(0.034)</b>	<b>(0.120)</b>	<b>(0.349)</b>	<b>(0.015)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.003</b>	<b>–</b>	<b>(0.000)</b>	<b>(0.003)</b>	<b>(0.000)</b>	<b>–</b>	<b>0.139</b>	<b>8.099</b>	<b>0.244</b>	<b>1.174</b>
<b>PSD Thresholds</b>										
<b>Fractional Increase from Existing Conditions</b>	<b>0.99</b>		<b>(0.36)</b>	<b>(0.36)</b>	<b>(0.36)</b>		<b>4.04</b>	<b>67.54</b>	<b>0.70</b>	<b>77.04</b>
<b>Grand Forks County 2008 Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Grand Forks County Emissions</b>	–	–	–	–	–	–	–	–	–	–

Source Type	Tons per Year									
	Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene
KC-46A Aircraft Operations	–	–	–	0.273	0.367	–	–	0.156	–	–
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	0.079	0.105	–	–	0.045	–	–
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	0.000	0.006	0.000	–	–
UAS Operations	–	–	–	0.003	0.004	–	0.004	0.002	–	–
Transient Aircraft	–	–	–	0.001	–	–	–	0.000	–	–
On-Wing Aircraft Engine Testing - UASs	–	–	–	0.001	0.002	–	0.002	0.001	–	–
AGE - Existing Aircraft	0.000	0.000	0.000	–	–	0.001	–	–	–	0.000
Government Motor Vehicles	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	0.00	–	–	–	–	–	–
Point and Area Sources	0.10	0.02	0.58	0.07	–	0.00	–	0.00	0.01	–
<b>Total Proposed Emissions - 2016</b>	<b>0.096</b>	<b>0.016</b>	<b>0.585</b>	<b>0.426</b>	<b>0.478</b>	<b>0.001</b>	<b>0.011</b>	<b>0.204</b>	<b>0.015</b>	<b>0.000</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.057)</b>	<b>(0.010)</b>	<b>(0.344)</b>	<b>(0.046)</b>	<b>(0.006)</b>	<b>(0.001)</b>	<b>(0.006)</b>	<b>(0.003)</b>	<b>(0.009)</b>	<b>(0.001)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.040</b>	<b>0.006</b>	<b>0.241</b>	<b>0.380</b>	<b>0.472</b>	<b>(0.000)</b>	<b>0.006</b>	<b>0.202</b>	<b>0.006</b>	<b>(0.000)</b>
<b>PSD Thresholds</b>										
<b>Fractional Increase from Existing Conditions</b>	<b>0.70</b>	<b>0.63</b>	<b>0.70</b>	<b>8.34</b>	<b>82.97</b>	<b>(0.30)</b>	<b>1.02</b>	<b>71.29</b>	<b>0.70</b>	<b>(0.36)</b>
<b>Grand Forks County 2008 Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Grand Forks County Emissions</b>	–	–	–	–	–	–	–	–	–	–

**Table D.3-22. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at Grand Forks AFB – Year 2016 (Continued)**

Source Type	Tons per Year						
	Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-46A Aircraft Operations	0.324	–	–	–	–	0.143	0.084
On-Wing Aircraft Engine Testing - KC-46A	0.093	–	–	–	–	0.041	0.024
Aerospace Ground Support Equipment - KC-46A	0.009	–	–	–	–	–	0.006
UAS Operations	0.003	–	–	–	–	0.002	0.001
Transient Aircraft	0.001	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - UASs	0.001	–	–	–	–	0.001	0.000
AGE - Existing Aircraft	–	–	–	–	–	–	–
Government Motor Vehicles	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	0.00	–	0.00	–	–	0.01
Point and Area Sources	1.38	–	–	0.10	–	–	0.19
<b>Total Proposed Emissions - 2016</b>	<b>1.816</b>	<b>0.004</b>	<b>–</b>	<b>0.102</b>	<b>–</b>	<b>0.186</b>	<b>0.316</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.822)</b>	<b>(0.000)</b>	<b>–</b>	<b>(0.060)</b>	<b>–</b>	<b>(0.002)</b>	<b>(0.117)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.994</b>	<b>0.004</b>	<b>–</b>	<b>0.042</b>	<b>–</b>	<b>0.183</b>	<b>0.200</b>
<b>PSD Thresholds</b>							
<b>Fractional Increase from Existing Conditions</b>	<b>1.21</b>	<b>9.80</b>		<b>0.70</b>		<b>75.23</b>	<b>1.71</b>
<b>Grand Forks County 2008 Emissions</b>	–	–	–	–	–	–	–
<b>Fractional Increase from Grand Forks County Emissions</b>	–	–	–	–	–	–	–

**Key:** ( ) = parenthesis indicate negative numbers, – = Source does not emit particular pollutant, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, Co = county, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, UAS = Unmanned Aircraft System, VOC = volatile organic compound.

#### **D.4            McCONNELL AIR FORCE BASE REGIONAL CLIMATE**

McConnell, Kansas, has a continental climate, characterized by pronounced variations in daily and seasonal temperatures and seasonal and annual precipitation. Meteorological data collected at Wichita Mid-Continent Airport are used to describe the climate of the McConnell AFB project area (NOAA 1998, 2013b).

**Temperature.** The McConnell AFB project region is known for high temperatures in the summer months and cool conditions during the winter. The average high and low temperatures during the summer months for the region range from about 92 degrees Fahrenheit (°F) to 60 °F. The average high and low temperatures during the winter months range from 58 °F to 22 °F.

**Precipitation.** The average annual precipitation for McConnell AFB is 32.6 inches. Precipitation is greatest during the warmer months of the year, and the peak monthly average of 5.1 inches occurs in June. Precipitation is at a minimum during the winter, as the lowest monthly average of 0.9 inches occurs in January. Snow is not uncommon during winter; the average annual snowfall amounts to 15.5 inches.

**Prevailing Winds.** McConnell AFB experiences fairly breezy conditions, as the average wind speed for each month of the year is at least 8 miles per hour and the annual average wind speed is 9.6 miles per hour. Spring is generally the windiest season, as the peak average monthly winds of 11 miles per hour occur in March and April. The winds prevail from the north from January through August and from the south from September through December (NOAA 1998).

## D.4.1 OPERATIONS EMISSION CALCULATIONS FOR THE KC-46A PROJECT SCENARIOS AT McCONNELL AFB

**Table D.4-1. Annual Air Operations for Aircraft at Fairchild AFB – Year 2012**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
KC-135	1,474	–	–	5,983	7,457
UH-60	1,302	–	–	720	2,022
UH-1N	412	–	–	2,184	2,596
Transient	975	–	–	2,205	3,179
<b>Totals</b>	<b>4,162</b>	<b>–</b>	<b>–</b>	<b>11,091</b>	<b>15,253</b>

**Key:** LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Table D.4-2. Annual Air Operations for Aircraft at McConnell AFB – Year 2012**

Aircraft	Number of Operations				
	LTO	TGO	LFB	LFP	Total
KC-135	2,771	–	–	9,490	12,261
Transient	2,838	–	–	2,838	5,676
<b>Totals</b>	<b>5,609</b>	<b>–</b>	<b>–</b>	<b>12,328</b>	<b>17,937</b>

**Key:** LFB = low flyby, LFP = low flight pattern, LTO = landing and takeoff, TGO = touch and go.

**Source:** EIS Table 2-17.

**Table D.4-3. Year 2012 Aircraft Closed Pattern Operations at McConnell AFB – KC-46A Project Existing Conditions**

Aircraft Type/Operation	Operations per Year	Engine Setting/Time in Mode (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
KC-135									
Closed Pattern - Radar & Initial to Overhead	4,413	12.0	2.0	–	1.0	883	147	–	74
Closed Pattern - VFR	2,998	5.0	2.0	–	1.0	250	100	–	50
Closed Pattern - Tactical	2,079	8.0	2.0	2.0	1.0	277	69	69	35
Total TIMs -						1,410	316	69	158
Transient <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	1,320	12.0	2.0	–	1.0	264	44	–	22
Closed Pattern - VFR	896	5.0	2.0	–	1.0	75	30	–	15
Closed Pattern - Tactical	622	8.0	2.0	2.0	1.0	83	21	21	10
Total TIMs -						422	95	21	47

<sup>a</sup> Engine setting TIMs assumed = KC-135 as there are several large aircraft = KC-135s and C-130s.

**Key:** % = percent, TIM = Time in Mode, VFR = visual flight rules.

**Table D.4-4. Annual Air Emissions from Year 2012 Aircraft Operations at  
McConnell AFB – KC-46A Project Existing Conditions**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Fairchild AFB - Year 2012</b>										
Transient Aircraft - LTOs	3.95	14.49	9.00	0.90	2.20	2.20	1,649.33	0.05	0.05	1,666.19
Transient Aircraft - Closed Patterns	0.30	7.97	55.49	4.53	0.24	0.24	13,756.55	0.38	0.43	13,897.15
<b>McConnell AFB Year 2012 - LTOs</b>										
KC-135 Aircraft	9.59	142.20	52.23	7.54	0.42	0.42	22,870	0.63	0.71	23,104
Transient Aircraft	11.50	42.21	26.20	2.62	6.40	6.40	4,803	0.13	0.15	4,852
<b>Subtotal - McConnell AFB Year 2012 LTOs</b>	<b>21.08</b>	<b>184.40</b>	<b>78.42</b>	<b>10.16</b>	<b>6.83</b>	<b>6.83</b>	<b>27,673</b>	<b>0.77</b>	<b>0.86</b>	<b>27,956</b>
<b>McConnell AFB Year 2012 - Closed Patterns</b>										
KC-135 - 55%	0.92	28.22	142.12	12.83	0.67	0.67	38,914	1.08	1.21	39,312
KC-135 - 60%	0.22	5.77	36.70	3.12	0.16	0.16	9,477	0.26	0.29	9,574
KC-135 - Climbout	0.05	0.08	14.39	0.95	0.04	0.04	2,892	0.08	0.09	2,921
KC-135 - Take-off	0.11	0.22	45.65	2.62	0.17	0.17	7,936	0.22	0.25	8,017
Transient Aircraft	0.39	10.25	71.43	5.84	0.31	0.31	17,710	0.49	0.55	17,891
<b>Subtotal - McConnell AFB Year 2012 Closed Patterns</b>	<b>1.69</b>	<b>44.54</b>	<b>310.30</b>	<b>25.36</b>	<b>1.36</b>	<b>1.36</b>	<b>76,929</b>	<b>2.13</b>	<b>2.39</b>	<b>77,715</b>
<b>Total Year 2012 - McConnell AFB</b>	<b>22.78</b>	<b>228.95</b>	<b>388.72</b>	<b>35.51</b>	<b>8.19</b>	<b>8.19</b>	<b>104,602</b>	<b>2.89</b>	<b>3.25</b>	<b>105,672</b>
<b>Total Year 2012 KC-135 Aircraft Operations</b>	<b>10.89</b>	<b>176.49</b>	<b>291.09</b>	<b>27.06</b>	<b>1.47</b>	<b>1.47</b>	<b>82,089</b>	<b>2.27</b>	<b>2.55</b>	<b>82,928</b>
<b>Total Year 2012 Transient Aircraft Operations</b>	<b>11.89</b>	<b>52.46</b>	<b>97.63</b>	<b>8.46</b>	<b>6.72</b>	<b>6.72</b>	<b>22,513</b>	<b>0.62</b>	<b>0.70</b>	<b>22,743</b>
Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloroform	Chloro-methane	o-Cresol	p-Cresol
<b>Fairchild AFB - Year 2012</b>										
Transient Aircraft - LTOs	0.01	0.01	0.02	–	–	–	–	–	–	–
Transient Aircraft - Closed Patterns	0.00	0.00	0.00	–	–	–	–	–	–	–
<b>McConnell AFB Year 2012 - LTOs</b>										
KC-135 Aircraft	–	–	0.01	–	–	0.00	0.01	0.01	–	–
Transient Aircraft	0.03	0.03	0.05	–	–	–	–	–	–	–
<b>Subtotal - McConnell AFB Year 2012 LTOs</b>	<b>0.03</b>	<b>0.03</b>	<b>0.06</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.01</b>	<b>0.01</b>	<b>–</b>	<b>–</b>
<b>McConnell AFB Year 2012 - Closed Patterns</b>										
KC-135 - 55%	–	–	0.02	–	–	0.01	0.02	0.01	–	–
KC-135 - 60%	–	–	0.00	–	–	0.00	0.01	0.00	–	–
KC-135 - Climbout	–	–	0.00	–	–	0.00	0.00	0.00	–	–
KC-135 - Take-off	–	–	0.00	–	–	–	0.00	0.00	–	–
Transient Aircraft	0.00	0.00	0.00	–	–	–	–	–	–	–
<b>Subtotal - McConnell AFB Year 2012 Closed Patterns</b>	<b>0.00</b>	<b>0.00</b>	<b>0.03</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>0.03</b>	<b>0.01</b>	<b>–</b>	<b>–</b>
<b>Total Year 2012 - McConnell AFB</b>	<b>0.03</b>	<b>0.03</b>	<b>0.10</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>0.05</b>	<b>0.02</b>	<b>–</b>	<b>–</b>
<b>Total Year 2012 KC-135 Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>0.04</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>0.05</b>	<b>0.02</b>	<b>–</b>	<b>–</b>
<b>Total Year 2012 Transient Aircraft Operations</b>	<b>0.03</b>	<b>0.03</b>	<b>0.05</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.4-4. Annual Air Emissions from Year 2012 Aircraft Operations at McConnell AFB – KC-46A Project Existing Conditions (Continued)**

Scenario/Source	Annual Emissions - Tons									
	Dibenzo-furan	Dibutyl Phthalate	1,2-Dichloro-propane	2,4-Dinitro-phenol	Di(2-Ethyl-hexyl) Phthalate (DEHP)	Ethyl-benzene	Formal-dehyde	Hexane	Methanol	Methylene Chloride
<b>Fairchild AFB - Year 2012</b>										
Transient Aircraft - LTOs	–	–	–	–	–	0.00	0.06	–	–	–
Transient Aircraft - Closed Patterns	–	–	–	–	–	0.00	0.00	–	–	–
<b>McConnell AFB Year 2012 - LTOs</b>										
KC-135 Aircraft	–	–	–	–	0.03	0.00	0.45	–	–	0.40
Transient Aircraft	–	–	–	–	–	0.01	0.17	–	–	–
<b>Subtotal - McConnell AFB Year 2012 LTOs</b>	–	–	–	–	<b>0.03</b>	<b>0.01</b>	<b>0.63</b>	–	–	<b>0.40</b>
<b>McConnell AFB Year 2012 - Closed Patterns</b>										
KC-135 - 55%	–	–	–	–	0.03	0.00	0.13	–	–	0.57
KC-135 - 60%	–	–	–	–	0.01	0.00	0.03	–	–	0.14
KC-135 - Climbout	–	–	–	–	0.00	–	0.01	–	–	0.05
KC-135 - Take-off	–	–	–	–	0.00	–	0.02	–	–	0.00
Transient Aircraft	–	–	–	–	–	0.00	0.01	–	–	–
<b>Subtotal - McConnell AFB Year 2012 Closed Patterns</b>	–	–	–	–	<b>0.05</b>	<b>0.00</b>	<b>0.19</b>	–	–	<b>0.76</b>
<b>Total Year 2012 - McConnell AFB</b>	–	–	–	–	<b>0.08</b>	<b>0.01</b>	<b>0.81</b>	–	–	<b>1.17</b>
<b>Total Year 2012 KC-135 Aircraft Operations</b>	–	–	–	–	<b>0.08</b>	<b>0.01</b>	<b>0.63</b>	–	–	<b>1.17</b>
<b>Total Year 2012 Transient Aircraft Operations</b>	–	–	–	–	–	<b>0.01</b>	<b>0.18</b>	–	–	–
Scenario/Source	Annual Emissions - Tons									
	MIBK	MTBE	Naphthalene	Phenol	POM	Propion-aldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetra-chloro-ethene	Toluene
<b>Fairchild AFB - Year 2012</b>										
Transient Aircraft - LTOs	–	–	0.01	–	–	–	0.00	–	–	0.01
Transient Aircraft - Closed Patterns	–	–	0.00	–	–	–	0.00	–	–	0.00
<b>McConnell AFB Year 2012 - LTOs</b>										
KC-135 Aircraft	–	–	0.01	–	–	–	0.01	–	0.01	0.05
Transient Aircraft	–	–	0.01	–	–	–	0.01	–	–	0.02
<b>Subtotal - McConnell AFB Year 2012 LTOs</b>	–	–	<b>0.03</b>	–	–	–	<b>0.01</b>	–	<b>0.01</b>	<b>0.07</b>
<b>McConnell AFB Year 2012 - Closed Patterns</b>										
KC-135 - 55%	–	–	–	–	–	–	–	–	0.02	0.05
KC-135 - 60%	–	–	–	–	–	–	–	–	0.00	0.01
KC-135 - Climbout	–	–	–	–	–	–	–	–	0.00	0.00
KC-135 - Take-off	–	–	–	–	–	–	–	–	0.00	0.00
Transient Aircraft	–	–	0.00	–	–	–	0.00	–	–	0.00
<b>Subtotal - McConnell AFB Year 2012 Closed Patterns</b>	–	–	<b>0.00</b>	–	–	–	<b>0.00</b>	–	<b>0.03</b>	<b>0.06</b>
<b>Total Year 2012 - McConnell AFB</b>	–	–	<b>0.03</b>	–	–	–	<b>0.01</b>	–	<b>0.04</b>	<b>0.14</b>
<b>Total Year 2012 KC-135 Aircraft Operations</b>	–	–	<b>0.01</b>	–	–	–	<b>0.01</b>	–	<b>0.04</b>	<b>0.11</b>
<b>Total Year 2012 Transient Aircraft Operations</b>	–	–	<b>0.02</b>	–	–	–	<b>0.01</b>	–	–	<b>0.02</b>

**Table D.4-4. Annual Air Emissions from Year 2012 Aircraft Operations at McConnell AFB – KC-46A Project Existing Conditions (Continued)**

Scenario/Source	Annual Emissions - Tons				
	1,1,1-Trichloro-ethane	Trichloro-ethEne	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Fairchild AFB - Year 2012</b>					
Transient Aircraft - LTOs	–	–	–	–	–
Transient Aircraft - Closed Patterns	–	–	–	–	–
<b>McConnell AFB Year 2012 - LTOs</b>					
KC-135 Aircraft	0.00	–	0.03	0.01	–
Transient Aircraft	–	–	–	–	–
<b>Subtotal - McConnell AFB Year 2012 LTOs</b>	<b>0.00</b>	<b>–</b>	<b>0.03</b>	<b>0.01</b>	<b>–</b>
<b>McConnell AFB Year 2012 - Closed Patterns</b>					
KC-135 - 55%	0.01	–	0.04	0.01	–
KC-135 - 60%	0.00	–	0.01	0.00	–
KC-135 - Climbout	–	–	0.00	0.00	–
KC-135 - Take-off	0.00	–	0.01	0.00	–
Transient Aircraft	–	–	–	–	–
<b>Subtotal - McConnell AFB Year 2012 Closed Patterns</b>	<b>0.01</b>	<b>–</b>	<b>0.06</b>	<b>0.02</b>	<b>–</b>
<b>Total Year 2012 - McConnell AFB</b>	<b>0.01</b>	<b>–</b>	<b>0.09</b>	<b>0.03</b>	<b>–</b>
<b>Total Year 2012 KC-135 Aircraft Operations</b>	<b>0.01</b>	<b>–</b>	<b>0.09</b>	<b>0.03</b>	<b>–</b>
<b>Total Year 2012 Transient Aircraft Operations</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Key:** AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, LTO = landing and takeoff, McConnell AFB = McConnell Air Force Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-5. Annual Average Nonroad Emission Factors – Fairchild AFB and McConnell AFB**

HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>						
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>
<b>Year 2012 - Fairchild AFB</b>							
Nonroad Equipment - 25-40 Hp	0.70	3.43	4.87	0.13	0.50	0.46	609
Nonroad Equipment - 41-50 Hp	0.50	2.56	4.93	0.13	0.45	0.41	610
Nonroad Equipment - 51-75 Hp	0.48	2.52	4.90	0.13	0.44	0.40	611
Nonroad Equipment - 76-100 Hp	0.52	3.68	4.61	0.13	0.53	0.49	607
Nonroad Equipment - 101-175 Hp	0.54	3.92	4.58	0.13	0.61	0.56	608
Nonroad Equipment - 176-300 Hp	0.38	1.72	4.09	0.11	0.38	0.35	547
<b>Year 2016 McConnell AFB</b>							
Nonroad Equipment - 101-175 Hp	0.38	2.75	3.11	0.12	0.46	0.42	608

<sup>a</sup> Factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Spokane County 2012 and Sedgwick County 2016.

**Key:** AFB = Air Force Base, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, EPA = Environmental Protection Agency, Hp = horsepower, NO<sub>x</sub> = nitrogen oxides, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-6. Annual Air Emissions for Existing AGE Usages – McConnell AFB  
KC-46A Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.04	0.17	0.24	0.01	0.03	0.02	30	0.00	0.00	30.68
76-100 Hp	0.00	0.00	0.00	0.00	0.00	0.00	0	0.00	0.00	0.26
101-175 Hp	1.20	8.70	10.17	0.29	1.35	1.25	1,350	0.21	0.01	1,358.71
176-300 Hp	0.00	0.02	0.04	0.00	0.00	0.00	5	0.00	0.00	4.95
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>1.24</b>	<b>8.89</b>	<b>10.45</b>	<b>0.30</b>	<b>1.38</b>	<b>1.27</b>	<b>1,385</b>	<b>0.21</b>	<b>0.02</b>	<b>1,395</b>
<b>Subtotal - Year 2012 McConnell AFB <sup>a</sup></b>	<b>1.67</b>	<b>11.98</b>	<b>14.08</b>	<b>0.40</b>	<b>1.86</b>	<b>1.71</b>	<b>1,867</b>	<b>0.29</b>	<b>0.02</b>	<b>1,879</b>
<b>Subtotal - Year 2016 McConnell AFB FTU Scenario <sup>b</sup></b>	<b>1.17</b>	<b>8.41</b>	<b>9.56</b>	<b>0.37</b>	<b>1.41</b>	<b>1.29</b>	<b>1,868</b>	<b>0.29</b>	<b>0.02</b>	<b>1,881</b>
<b>Subtotal - Year 2016 McConnell AFB MOB 1 Scenario <sup>c</sup></b>	<b>0.59</b>	<b>4.25</b>	<b>4.84</b>	<b>0.19</b>	<b>0.71</b>	<b>0.65</b>	<b>945</b>	<b>0.15</b>	<b>0.01</b>	<b>952</b>

Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.00	0.00	0.00	0.00	–	–	–	–	–	–
76-100 Hp	0.00	0.00	0.00	0.00	–	–	–	–	–	–
101-175 Hp	0.09	0.01	0.02	0.00	–	–	–	–	–	–
176-300 Hp	0.00	0.00	0.00	0.00	–	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>0.09</b>	<b>0.01</b>	<b>0.03</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2012 McConnell AFB <sup>a</sup></b>	<b>0.12</b>	<b>0.02</b>	<b>0.03</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB FTU Scenario <sup>b</sup></b>	<b>0.09</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB MOB 1 Scenario <sup>c</sup></b>	<b>0.06</b>	<b>0.01</b>	<b>0.02</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

Scenario/Source	Annual Emissions - Tons									
	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	Di(2-Ethylhexyl) Phthalate (DEHP)	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	–	–	0.00	0.01	0.00	–	–	–	–	–
76-100 Hp	–	–	0.00	0.00	0.00	–	–	–	–	–
101-175 Hp	–	–	0.00	0.18	0.00	–	–	–	–	–
176-300 Hp	–	–	0.00	0.00	0.00	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.19</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2012 McConnell AFB <sup>a</sup></b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>0.25</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB FTU Scenario <sup>b</sup></b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.18</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB MOB 1 Scenario <sup>c</sup></b>	<b>–</b>	<b>–</b>	<b>0.00</b>	<b>0.12</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.4-6. Annual Air Emissions for Existing AGE Usages – McConnell AFB  
KC-46A Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene
<b>Year 2012 - Fairchild AFB</b>										
10-50 Hp	0.00	0.00	0.00	–	–	0.00	–	–	–	0.00
76-100 Hp	0.00	0.00	0.00	–	–	0.00	–	–	–	0.00
101-175 Hp	0.00	0.01	0.00	–	–	0.02	–	–	–	0.01
176-300 Hp	0.00	0.00	0.00	–	–	0.00	–	–	–	0.00
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.02</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.01</b>
<b>Subtotal - Year 2012 McConnell AFB <sup>a</sup></b>	<b>0.00</b>	<b>0.02</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.03</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.02</b>
<b>Subtotal - Year 2016 McConnell AFB FTU Scenario <sup>b</sup></b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.02</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.01</b>
<b>Subtotal - Year 2016 McConnell AFB MOB 1 Scenario <sup>c</sup></b>	<b>0.00</b>	<b>0.01</b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.01</b>

Scenario/Source	Annual Emissions - Tons				
	1,1,1-Trichloroethane	Trichloroethene	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012 - Fairchild AFB</b>					
10-50 Hp	–	–	–	–	–
76-100 Hp	–	–	–	–	–
101-175 Hp	–	–	–	–	–
176-300 Hp	–	–	–	–	–
<b>Subtotal - Year 2012 Fairchild AFB</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2012 McConnell AFB <sup>a</sup></b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB FTU Scenario <sup>b</sup></b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Subtotal - Year 2016 McConnell AFB MOB 1 Scenario <sup>c</sup></b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

<sup>a</sup> 2012 McConnell AFB AGE emissions = Fairchild AFB 2012 emissions \* McConnell AFB 2012 total LTOs/ Fairchild AFB 2012 total LTOs.

<sup>b</sup> 2016 McConnell AFB existing aircraft AGE emissions for the FTU scenario = 2012 Fairchild AFB AGE emissions \* (McConnell AFB 2016 nonroad EFs/2012 Fairchild AFB nonroad EFs).

<sup>c</sup> 2016 McConnell AFB existing aircraft AGE emissions for the MOB 1 scenario = 2012 Fairchild AFB AGE emissions \* (McConnell AFB 2016 transient aircraft LTOs/ Fairchild AFB 2012 LTOs) \* (McConnell AFB 2016 nonroad EFs/2012 Fairchild AFB nonroad EFs).

**Key:** AFB = Air Force Base, AGE = aerospace ground equipment, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, Efs = emission factors, FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-7. Existing Aircraft On-Wing Engine Testing Activity Data for  
McConnell AFB – Year 2012**

Aircraft/Test Type	Tests/Year	# of Engines	Duration (Minutes)	Engine Setting/Annual Engine Hours			
				Idle	Approach	Intermediate	Takeoff
KC-135 <sup>a</sup>							
Pre-Flight Run - Assume part of LTO							
Idle Run	3,380	1	10	563.3	–	–	–
Mid-Power Run	2,080	2	10	693.3	–	–	–
Mid-Power Run	2,080	2	60	–	–	520.0	–
Power Run	1,560	2	10	520.0	–	–	–
Power Run	1,560	2	30	–	–	–	195.0
Transient	10	2	10	3.3	–	–	–
Transient	10	2	30	–	–	–	1.3
Total Time In Modes - KC-135				1,780	–	520	196

<sup>a</sup> Source is SAIC 2013m.

**Key:** # = number, LTO = landing and takeoff, TIM = Time in Mode.

**Table D.4-8. Annual Air Emissions from Existing Aircraft On-Wing Engine Testing Activities for McConnell AFB – Year 2012**

Scenario/Engine Type	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
KC-135										
Idle	1.90	27.70	3.61	0.96	0.05	0.05	2,902	0.08	0.09	2,931
Approach	—	—	—	—	—	—	—	—	—	—
Intermediate	0.10	0.15	26.98	1.79	0.08	0.08	5,424	0.15	0.17	5,479
Military	0.04	0.07	14.16	0.81	0.05	0.05	2,462	0.07	0.08	2,487
Subtotal KC-135	2.03	27.92	44.75	3.56	0.19	0.19	10,787	0.30	0.34	10,897
Total Emissions - 2012	2.03	27.92	44.75	3.56	0.19	0.19	10,787	0.30	0.34	10,897
Scenario/Engine Type	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	o-Cresol	p-Cresol
KC-135										
Idle	—	—	0.002	—	—	—	0.002	0.001	—	—
Approach	—	—	—	—	—	—	—	—	—	—
Intermediate	—	—	0.001	—	—	0.001	0.003	0.001	—	—
Military	—	—	0.001	—	—	—	0.001	0.000	—	—
Subtotal KC-135	—	—	0.003	—	—	0.001	0.006	0.002	—	—
Total Emissions - 2012	—	—	0.003	—	—	0.001	0.006	0.002	—	—
Scenario/Engine Type	Annual Emissions - Tons									
	Dibenzofuran	Dibutyl Phthalate	1,2-Dichloropropane	2,4-Dinitrophenol	Di(2-Ethylhexyl) Phthalate (DEHP)	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride
KC-135										
Idle	—	—	—	—	0.005	0.001	0.086	—	—	0.061
Approach	—	—	—	—	—	—	—	—	—	—
Intermediate	—	—	—	—	0.008	—	0.009	—	—	0.085
Military	—	—	—	—	0.001	—	0.005	—	—	0.002
Subtotal KC-135	—	—	—	—	0.014	0.001	0.101	—	—	0.148
Total Emissions - 2012	—	—	—	—	0.014	0.001	0.101	—	—	0.148
Scenario/Engine Type	Annual Emissions - Tons									
	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene
KC-135										
Idle	—	—	0.003	—	—	—	0.001	—	0.002	0.008
Approach	—	—	—	—	—	—	—	—	—	—
Intermediate	—	—	—	—	—	—	—	—	0.001	0.002
Military	—	—	—	—	—	—	—	—	0.001	0.001
Subtotal KC-135	—	—	0.003	—	—	—	0.001	—	0.003	0.011
Total Emissions - 2012	—	—	0.003	—	—	—	0.001	—	0.003	0.011
Scenario/Engine Type	Annual Emissions - Tons									
	1,1,1-Trichloroethane	Trichloroethene	Vinyl Acetate	mp-Xylene	o-Xylene					
KC-135										
Idle	0.001	—	0.004	0.001	—					
Approach	—	—	—	—	—					
Intermediate	—	—	0.004	0.001	—					
Military	0.000	—	0.002	0.000	—					
Subtotal KC-135	0.001	—	0.011	0.003	—					
Total Emissions - 2012	0.001	—	0.011	0.003	—					

**Key:** CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-9. Annual Aircraft LTOs –  
McConnell AFB KC-46A Project Scenarios**

Aircraft	Annual LTOs			
	Fairchild AFB 2012	McConnell AFB 2012	McConnell AFB FTU	McConnell AFB MOB 1
KC-135	1,474	2,771	2,771	–
UH-60	1,302	–	–	–
UH-1N	412	–	–	–
Transient	975	2,838	2,838	2,838
KC-46A	–	–	1,827	2,815
<b>Total LTOs</b>	<b>4,162</b>	<b>5,609</b>	<b>7,435</b>	<b>5,653</b>

**Key:** AFB = Air Force Base, FTU = Formal Training Unit, LTO = landing and takeoff, MOB 1 = First Main Operating Base.

**Table D.4-10. Annual Average Nonroad Emission Factors – McConnell AFB  
KC-46A Scenarios**

HP Category/Fuel Type	Emission Factors (Grams/Horsepower) <sup>a</sup>								
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O
<b>Year 2012 - Fairchild AFB</b>									
100-175 HP Diesel	0.54	3.92	4.58	0.13	0.61	0.56	608	0.094	0.007
<b>Year 2016 McConnell AFB</b>									
100-175 HP Diesel	0.38	2.75	3.11	0.12	0.46	0.42	608	0.094	0.007

<sup>a</sup> Year 2012/2016 factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Spokane/Sedgwick Counties.

**Key:** AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, HP = horsepower, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-11. Annual Air Emissions for AGE Usages by KC-46A Aircraft –  
McConnell AFB KC-46A Scenarios**

Scenario/Source	Annual Emissions - Tons									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012 - Fairchild AFB</b>										
Aerospace Ground Support Equipment	1.24	8.89	10.45	0.30	1.38	1.27	1,385	0.21	0.02	1,395
<b>Subtotal - Year 2008</b>	<b>1.24</b>	<b>8.89</b>	<b>10.45</b>	<b>0.30</b>	<b>1.38</b>	<b>1.27</b>	<b>1,385</b>	<b>0.21</b>	<b>0.02</b>	<b>1,395</b>
<b>Year 2016 - McConnell AFB FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.38	2.74	3.11	0.12	0.46	0.42	608	0.09	0.01	613
<b>Subtotal - FTU Scenario</b>	<b>0.38</b>	<b>2.74</b>	<b>3.11</b>	<b>0.12</b>	<b>0.46</b>	<b>0.42</b>	<b>608</b>	<b>0.09</b>	<b>0.01</b>	<b>613</b>
<b>Year 2016 - McConnell AFB MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.59	4.22	4.80	0.18	0.71	0.65	937	0.14	0.01	943
<b>Subtotal - MOB 1 Scenario</b>	<b>0.59</b>	<b>4.22</b>	<b>4.80</b>	<b>0.18</b>	<b>0.71</b>	<b>0.65</b>	<b>937</b>	<b>0.14</b>	<b>0.01</b>	<b>943</b>
Scenario/Source	Annual Emissions - Tons									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloroform	Chloro-methane	o-Cresol	p-Cresol
<b>Year 2012 - Fairchild AFB</b>										
Aerospace Ground Support Equipment	0.09	0.014	0.025	0.002	–	–	–	–	–	–
<b>Subtotal - Year 2008</b>	<b>0.09</b>	<b>0.014</b>	<b>0.025</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016 - McConnell AFB FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.03	0.004	0.008	0.001	–	–	–	–	–	–
<b>Subtotal - FTU Scenario</b>	<b>0</b>	<b>0.004</b>	<b>0.008</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Year 2016 - McConnell AFB MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.04	0.007	0.012	0.001	–	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	<b>0</b>	<b>0.007</b>	<b>0.012</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>

**Table D.4-11. Annual Air Emissions for AGE Usages by KC-46A Aircraft –  
McConnell AFB KC-46A Scenarios (Continued)**

Scenario/Source	Annual Emissions - Tons									
	Dibenz- ofuran	Dibutyl Phthalate	1,2- Dichloro- propane	2,4-Dinitro- phenol	Di(2-Ethyl- hexyl) Phthalate (DEHP)	Ethyl- benzene	Formalde- hyde	Hexane	Methanol	Methylene Chloride
<b>Year 2012 - Fairchild AFB</b>										
Aerospace Ground Support Equipment	–	–	0.004	0.185	0.002	–	–	–	–	–
<b>Subtotal - Year 2008</b>	–	–	<b>0.004</b>	<b>0.185</b>	<b>0.002</b>	–	–	–	–	–
<b>Year 2016 - McConnell AFB FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.001	0.057	0.001	–	–	–	–	–
<b>Subtotal - FTU Scenario</b>	–	–	<b>0.001</b>	<b>0.057</b>	<b>0.001</b>	–	–	–	–	–
<b>Year 2016 - McConnell AFB MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	–	–	0.002	0.088	0.001	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	–	–	<b>0.002</b>	<b>0.088</b>	<b>0.001</b>	–	–	–	–	–

Scenario/Source	Annual Emissions - Tons									
	MIBK	MTBE	Naphth- alene	Phenol	POM	Propio- nalde- hyde	Styrene	1,1,2,2- Tetra- chloro- ethane	Tetra- chloro- ethene	Toluene
<b>Year 2012 - Fairchild AFB</b>										
Aerospace Ground Support Equipment	0.000	0.012	0.001	–	–	0.019	–	–	–	0.013
<b>Subtotal - Year 2008</b>	<b>0.000</b>	<b>0.012</b>	<b>0.001</b>	–	–	<b>0.019</b>	–	–	–	<b>0.013</b>
<b>Year 2016 - McConnell AFB FTU Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.004	0.000	–	–	0.006	–	–	–	0.004
<b>Subtotal - FTU Scenario</b>	<b>0.000</b>	<b>0.004</b>	<b>0.000</b>	–	–	<b>0.006</b>	–	–	–	<b>0.004</b>
<b>Year 2016 - McConnell AFB MOB 1 Scenario</b>										
Aerospace Ground Support Equipment <sup>a</sup>	0.000	0.006	0.000	–	–	0.009	–	–	–	0.006
<b>Subtotal - MOB 1 Scenario</b>	<b>0.000</b>	<b>0.006</b>	<b>0.000</b>	–	–	<b>0.009</b>	–	–	–	<b>0.006</b>

Scenario/Source	Annual Emissions - Tons				
	1,1,1- Trichloro- ethane	Trichloro- ethene	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Year 2012 - Fairchild AFB</b>					
Aerospace Ground Support Equipment	–	–	–	–	–
<b>Subtotal - Year 2008</b>	–	–	–	–	–
<b>Year 2016 - McConnell AFB FTU Scenario</b>					
Aerospace Ground Support Equipment <sup>a</sup>	–	–	–	–	–
<b>Subtotal - FTU Scenario</b>	–	–	–	–	–
<b>Year 2016 - McConnell AFB MOB 1 Scenario</b>					
Aerospace Ground Support Equipment <sup>a</sup>	–	–	–	–	–
<b>Subtotal - MOB 1 Scenario</b>	–	–	–	–	–

<sup>a</sup> Future year AGE emissions = 2012 Fairchild AGE emissions times the ratio of future year/2012 Fairchild worker populations

\* scenario year nonroad emission factor/2012 nonroad emission factor.

**Key:** AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-12. Annual GMV/Nonroad Equipment Usages – McConnell AFB Project Scenarios**

Fuel Type	Annual Hp-Hr <sup>a</sup>				
	2012	Year 2016 FTU	Year 2016 MOB 1	Year 2016 FTU Only	Year 2016 MOB 1 Only
Biodiesel	4,161,433	4,745,312	3,554,233	583,879	1,624,669
Diesel	654,544	746,381	559,039	91,837	255,541
<b>Totals</b>	<b>4,815,977</b>	<b>5,491,693</b>	<b>4,113,272</b>	<b>675,716</b>	<b>1,880,210</b>

<sup>a</sup> Future year estimates based on ratio of future year/2012 Fairchild AFB worker populations.

**Key:** AFB = Air Force Base, FTU = Formal Training Unit, Hp = horsepower, Hr = hour, MOB 1 = First Main Operating Base.

**Table D.4-13. Annual Number of Workers – McConnell AFB KC-46A Project Scenarios**

Scenario	Total # of Workers <sup>a</sup>	Fraction of 2012	# of Workers per Scenario	Fraction of 2012
Year 2012	4,818	–	–	–
Year 2016 FTU	5,494	1.14	676	0.14
Year 2016 MOB 1	4,115	0.85	1,881	0.39

<sup>a</sup> EIS Tables 2-18 and 2-21.

**Key:** # = number, FTU = Formal Training Unit, MOB 1 = First Main Operating Base.

**Table D.4-14. Annual Average Nonroad Emission Factors – McConnell AFB KC-46A Scenarios**

Scenario/Vehicle Class	Emission Factors (Grams/Hp-Hr) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
Nonroad Equipment - 176-300 Hp - Biodiesel	0.30	1.72	4.17	0.11	0.33	0.20	547	0.094	0.007	551
Nonroad Equipment - 176-300 Hp - Diesel	0.38	1.72	4.09	0.11	0.38	0.20	547	0.094	0.007	551
<b>Year 2016 FTU or MOB 1</b>										
Nonroad Equipment - 176-300 Hp - Biodiesel	0.23	1.12	2.72	0.10	0.26	0.20	547	0.094	0.007	551
Nonroad Equipment - 176-300 Hp - Diesel	0.29	1.12	2.67	0.10	0.30	0.20	547	0.094	0.007	551

<sup>a</sup> Factors estimated with the use of the EPA NONROAD2008a model (USEPA 2009) for Sedgwick County. Biodiesel EFs reduced according to EPA 2002.

**Key:** CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EFs = emission factors, EPA = Environmental Protection Agency, FTU = Formal Training Unit, Hp = horsepower, Hr = hour, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-15. Annual Emissions from GMV/Nonroad Equipment Usages – McConnell AFB KC-46A Scenarios**

Scenario/Vehicle Class	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
Nonroad - Biodiesel	1.39	7.89	19.14	0.50	1.53	0.92	2,509.15	0.43	0.03	2,527.74
Nonroad - Diesel	0.27	1.24	2.95	0.08	0.27	0.14	394.66	0.07	0.00	397.58
<b>Total</b>	<b>1.67</b>	<b>9.13</b>	<b>22.09</b>	<b>0.58</b>	<b>1.81</b>	<b>1.06</b>	<b>2,903.81</b>	<b>0.50</b>	<b>0.04</b>	<b>2,925.32</b>
<b>Year 2016 FTU</b>										
Nonroad - Biodiesel	1.21	5.86	14.25	0.52	1.38	1.05	2,861.21	0.49	0.04	2,882.40
Nonroad - Diesel	0.24	0.92	2.20	0.08	0.25	0.16	450.03	0.08	0.01	453.37
<b>Total</b>	<b>1.45</b>	<b>6.78</b>	<b>16.44</b>	<b>0.61</b>	<b>1.63</b>	<b>1.21</b>	<b>3,311.24</b>	<b>0.57</b>	<b>0.04</b>	<b>3,335.76</b>
<b>Year 2016 MOB 1</b>										
Nonroad - Biodiesel	0.91	4.39	10.67	0.39	1.03	0.78	2,143.04	0.37	0.03	2,158.91
Nonroad - Diesel	0.18	0.69	1.65	0.06	0.18	0.12	337.07	0.06	0.00	339.57
<b>Total</b>	<b>1.09</b>	<b>5.08</b>	<b>12.32</b>	<b>0.45</b>	<b>1.22</b>	<b>0.91</b>	<b>2,480.11</b>	<b>0.43</b>	<b>0.03</b>	<b>2,498.48</b>
<b>Year 2016 FTU Only</b>										
Nonroad - Biodiesel	0.15	0.72	1.75	0.06	0.17	0.13	352.05	0.06	0.00	354.66
Nonroad - Diesel	0.03	0.11	0.27	0.01	0.03	0.02	55.37	0.01	0.00	55.78
<b>Total</b>	<b>0.18</b>	<b>0.83</b>	<b>2.02</b>	<b>0.07</b>	<b>0.20</b>	<b>0.15</b>	<b>407.43</b>	<b>0.07</b>	<b>0.00</b>	<b>410.44</b>
<b>Year 2016 MOB 1 Only</b>										
Nonroad - Biodiesel	0.42	2.01	4.88	0.18	0.47	0.36	979.60	0.17	0.01	986.86
Nonroad - Diesel	0.08	0.32	0.75	0.03	0.08	0.06	154.08	0.03	0.00	155.22
<b>Total</b>	<b>0.50</b>	<b>2.32</b>	<b>5.63</b>	<b>0.21</b>	<b>0.56</b>	<b>0.41</b>	<b>1,133.68</b>	<b>0.19</b>	<b>0.01</b>	<b>1,142.08</b>

**Note:** Future year emissions = 2008 emissions \* scenario worker fraction of 2008 \* scenario year vehicle emission factor/ 2008 vehicle emission factor.

**Key:** CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-16. Annual On Base On-Road Vehicle Mileage Calculations – McConnell AFB KC-46A Project Scenarios**

Scenario	# of Workers	Worker Fraction of	Days per Year	Vehicle Occupancy	Round Trips per Year	Miles per Round Trip <sup>a</sup>	Annual On Base VMT
Year 2012	4,818	—	260	0.95	1,190,046	3.0	3,570,138
Year 2016 FTU Only	676	0.14	260	0.95	166,972	3.0	500,916
Year 2016 MOB 1 Only	1,881	0.39	260	0.95	464,607	3.0	1,393,821
Year 2016 FTU Total Base	5,494	1.14	260	0.95	1,357,018	3.0	4,071,054
Year 2016 MOB 1 Total Base	4,115	0.85	260	0.95	1,016,405	3.0	3,049,215

<sup>a</sup> Estimated from base gate/roadway systems.

**Key:** # = number, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, VMT = vehicle miles traveled.

**Table D.4-17. Annual Average On-Road Emission Factors – McConnell AFB KC-46A Proposed Actions**

Project Year/Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.17	0.39	0.00	0.02	0.01	321	0.00	0.00	321
HDDV - Road 3	0.42	2.51	10.36	0.01	0.56	0.50	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.06	2.17	0.42	0.00	0.02	0.01	326	0.00	0.00	326
<b>Year 2016 FTU</b>										
LDGV - Road 3	0.03	1.60	0.19	0.00	0.02	0.01	302	0.00	0.00	302
HDDV - Road 3	0.25	1.57	6.44	0.01	0.36	0.30	1,949	0.00	0.00	1,949
Composite <sup>b</sup>	0.03	1.60	0.21	0.00	0.02	0.01	307	0.00	0.00	307

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Sedgwick County.

<sup>b</sup> Equal to 99.7/0.3% LDGV/HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicles, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-18. Annual Emissions from On Base On-Road Vehicle Activities – McConnell AFB KC-46A Scenarios**

Scenario Year/Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012	0.24	8.49	1.64	0.02	0.08	0.04	1,275	0.00	0.00	1,275
Year 2016 FTU Only	0.02	0.88	0.12	0.00	0.01	0.00	169	0.00	0.00	169
Year 2016 MOB 1 Only	0.05	2.44	0.32	0.01	0.03	0.01	469	0.00	0.00	469
Year 2016 FTU Total Base	0.13	7.13	0.94	0.02	0.08	0.04	1,370	0.00	0.00	1,371
Year 2016 MOB 1 Total Base	0.10	5.34	0.70	0.02	0.06	0.03	1,026	0.00	0.00	1,027

**Note:** Future year emissions = 2008 emissions \* scenario worker fraction of 2008 \* scenario year composite emission factor/ 2008 composite emission factor.

**Key:** CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-19. Annual On Base On-Road Vehicle Mileage Calculations – McConnell AFB KC-46A Project Scenarios**

Scenario	# of Workers	Worker Fraction of 2012	Days per Year	Vehicle Occupancy Rate	Round Trips per Year	Miles per Round Trip <sup>a</sup>	Annual On Base VMT
Year 2012	4,818	–	260	0.95	1,190,046	12.0	14,280,552
Year 2016 FTU Only	676	0.14	260	0.95	166,972	12.0	2,003,664
Year 2016 MOB 1 Only	1,881	0.39	260	0.95	464,607	12.0	5,575,284
Year 2016 FTU Total Base	5,494	1.14	260	0.95	1,357,018	12.0	16,284,216
Year 2016 MOB 1 Total Base	4,115	0.85	260	0.95	1,016,405	12.0	12,196,860

<sup>a</sup> Distance from McConnell AFB to the center of Wichita.

**Key:** # = number, AFB = Air Force Base, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, VMT = vehicle miles traveled.

**Table D.4-20. MOBILE6.2 Annual Average On-Road Emission Factors – McConnell AFB KC-46A Proposed Actions**

Project Year/Source Type	Emission Factors (Grams/Mile) <sup>a</sup>									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV - Road 3	0.06	2.17	0.39	0.00	0.02	0.01	321	0.0006	0.0001	321
LDGV - Road 5	0.09	2.79	0.41	0.01	0.04	0.01	397	0.0008	0.0002	398
LDGV - Composite <sup>b</sup>	0.08	2.64	0.41	0.01	0.03	0.01	378	0.0008	0.0002	386
HDDV - Road 3	0.42	2.51	10.36	0.01	0.56	0.50	1,949	0.0010	0.0009	1,949
HDDV - Road 5	0.66	3.67	12.74	0.02	1.00	0.83	2,426	0.0012	0.0011	2,427
HDDV - Composite <sup>b</sup>	0.60	3.38	12.15	0.02	0.89	0.74	2,307	0.0012	0.0011	2,355
<b>Year 2016 FTU</b>										
LDGV - Road 3	0.03	1.60	0.19	0.00	0.02	0.01	302	0.0006	0.0001	302
LDGV - Road 5	0.04	2.05	0.19	0.01	0.03	0.01	374	0.0007	0.0002	374
LDGV - Composite <sup>b</sup>	0.04	1.94	0.19	0.01	0.03	0.01	356	0.0007	0.0001	356
HDDV - Road 3	0.25	1.57	6.44	0.01	0.36	0.30	1,949	0.0010	0.0009	1,949
HDDV - Road 5	0.40	2.29	8.00	0.02	0.67	0.51	2,427	0.0012	0.0011	2,427
HDDV - Composite <sup>b</sup>	0.37	2.11	7.61	0.02	0.59	0.46	2,307	0.0012	0.0011	2,308

<sup>a</sup> Estimated with the use of the EPA MOVES2010b model (USEPA 2013) and based upon default parameters for Sedgwick County

<sup>b</sup> Equal to 25/75% road 3/road 5 conditions.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, EPA = Environmental Protection Agency, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-21. Annual Emissions from Off-Base Vehicle Activities – McConnell AFB  
KC-46A Scenarios**

Scenario Year/Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Year 2012</b>										
LDGV	1.21	40.41	6.22	0.09	0.48	0.20	5,802	0.01	0.00	5,920
HDDV	0.19	1.06	3.80	0.01	0.28	0.23	722	0.00	0.00	737
<b>Total</b>	<b>1.40</b>	<b>41.47</b>	<b>10.02</b>	<b>0.09</b>	<b>0.75</b>	<b>0.43</b>	<b>6,524</b>	<b>0.01</b>	<b>0.00</b>	<b>6,657</b>
<b>Year 2016 FTU Only</b>										
LDGV	0.08	4.16	0.42	0.01	0.06	0.03	766	0.00	0.00	766
HDDV	0.02	0.09	0.33	0.00	0.03	0.02	101	0.00	0.00	101
<b>Total</b>	<b>0.09</b>	<b>4.26</b>	<b>0.75</b>	<b>0.01</b>	<b>0.09</b>	<b>0.05</b>	<b>867</b>	<b>0.00</b>	<b>0.00</b>	<b>867</b>
<b>Year 2016 MOB 1 Only</b>										
LDGV	0.21	11.59	1.16	0.03	0.18	0.07	2,130	0.00	0.00	2,130
HDDV	0.04	0.26	0.93	0.00	0.07	0.06	282	0.00	0.00	282
<b>Total</b>	<b>0.25</b>	<b>11.85</b>	<b>2.09</b>	<b>0.03</b>	<b>0.25</b>	<b>0.13</b>	<b>2,412</b>	<b>0.00</b>	<b>0.00</b>	<b>2,412</b>
<b>Year 2016 FTU Total Base</b>										
LDGV	0.61	33.85	3.39	0.09	0.52	0.21	6,222	0.01	0.00	6,223
HDDV	0.13	0.75	2.72	0.01	0.21	0.16	823	0.00	0.00	824
<b>Total</b>	<b>0.74</b>	<b>34.60</b>	<b>6.10</b>	<b>0.10</b>	<b>0.73</b>	<b>0.37</b>	<b>7,045</b>	<b>0.01</b>	<b>0.00</b>	<b>7,046</b>
<b>Year 2016 MOB 1 Total Base</b>										
LDGV	0.46	25.35	2.54	0.07	0.39	0.15	4,660	0.01	0.00	4,661
HDDV	0.10	0.56	2.03	0.00	0.16	0.12	617	0.00	0.00	617
<b>Total</b>	<b>0.56</b>	<b>25.92</b>	<b>4.57</b>	<b>0.07</b>	<b>0.55</b>	<b>0.28</b>	<b>5,277</b>	<b>0.01</b>	<b>0.00</b>	<b>5,278</b>

**Notes:** Assumes that 2% of the fleet is HDDV.

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, HDDV = heavy duty diesel vehicle, LDGV = light duty gasoline vehicle, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-22. Annual Emissions from Mobile Fuel Transfer Activities – McConnell AFB  
KC-46A Scenarios.**

Scenario	# of Workers	Worker Fraction of 2012	Tons per Year									
			VOC	Benzene	Cumene	Ethyl-benzene	Hexane	MTBE	Naphthalene	Toluene	2,2,4 Trimethyl-pentane	Xylenes
Year 2008 Altus	4,062	–	0.10	0.0006	0.0003	0.0002	0.00006	0.00047	0.00000	0.00108	0.00010	0.00165
Year 2012 McConnell AFB	4,818	1.19	0.11	0.0007	0.0003	0.0003	0.0001	0.0006	0.0000	0.0013	0.0001	0.0020
Year 2016 FTU Only	676	0.17	0.02	0.0001	0.0000	0.0000	0.0000	0.0001	0.0000	0.0002	0.0000	0.0003
Year 2016 MOB 1 Only	1,881	0.46	0.04	0.0003	0.0001	0.0001	0.0000	0.0002	0.0000	0.0005	0.0000	0.0008
Year 2016 FTU Total Base	5,494	1.35	0.13	0.0008	0.0004	0.0003	0.0001	0.0006	0.0000	0.0015	0.0001	0.0022
Year 2016 MOB 1 Total Base	4,115	1.01	0.10	0.0006	0.0003	0.0002	0.0001	0.0005	0.0000	0.0011	0.0001	0.0017

**Notes:** Future year emissions = 2008 emissions \* future year fraction of 2008 worker population.

**Key:** # = number, AFB = Air Force Base, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, VOC = volatile organic compound.

**Table D.4-23. Annual Emissions from Point and Area Sources – McConnell AFB KC-46A Scenarios.**

Scenario Year/Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
Year 2012 <sup>a</sup>	–	7.96	11.94	0.27	–	–	–	–	–	–
Year 2016 FTU Only	–	1.12	1.68	0.04	–	–	–	–	–	–
Year 2016 MOB 1 Only	–	3.11	4.66	0.11	–	–	–	–	–	–
Year 2016 FTU Total Base	–	9.08	13.62	0.31	–	–	–	–	–	–
Year 2016 MOB 1 Total Base	–	6.80	10.20	0.23	–	–	–	–	–	–

<sup>a</sup> Source: (McConnell AFB 2013).

**Key:** AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, MOB 1 = First Main Operating Base, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-24. Annual Emissions for Existing Operations at McConnell AFB – Year 2012**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-135 Aircraft Operations	10.89	176.49	291.09	27.06	1.47	1.47	82,089	2.27	2.55	75,389
Transient Aircraft	11.89	52.46	97.63	8.46	6.72	6.72	22,513	0.62	0.70	20,676
On-Wing Aircraft Engine Testing - KC-135	2.03	27.92	44.75	3.56	0.19	0.19	10,787	0.30	0.34	9,907
Aerospace Ground Support Equipment	1.67	11.98	14.08	0.40	1.86	1.71	1,867	0.29	0.02	1,708
GMVs/Nonroad Equipment	1.67	9.13	22.09	0.58	1.81	1.06	2,904	0.50	0.04	2,659
Privately-Owned Vehicles - On-Base	0.24	8.49	1.64	0.02	0.08	0.04	1,275	0.00	0.00	1,159
Privately-Owned Vehicles - Off-Base	1.40	41.47	10.02	0.09	0.75	0.43	6,524	0.01	0.00	6,052
Mobile Fuel Transfer Operations	0.11	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	7.96	11.94	0.27	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>40.79</b>	<b>335.90</b>	<b>493.25</b>	<b>40.43</b>	<b>12.89</b>	<b>11.63</b>	<b>127,960</b>	<b>4.00</b>	<b>3.65</b>	<b>117,551</b>

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-form	Chloro-methane	o-Cresol	p-Cresol
KC-135 Aircraft Operations	–	–	0.04	–	–	0.01	0.05	0.02	–	–
Transient Aircraft	0.03	0.03	0.05	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	0.00	–	–	0.00	0.01	0.00	–	–
Aerospace Ground Support Equipment	0.12	0.02	0.03	0.00	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>0.15</b>	<b>0.05</b>	<b>0.13</b>	<b>0.00</b>	<b>–</b>	<b>0.01</b>	<b>0.05</b>	<b>0.02</b>	<b>–</b>	<b>–</b>

**Table D.4-24. Annual Emissions for Existing Operations at McConnell AFB – Year 2012  
(Continued)**

Source Type	Tons per Year									
	<i>Cumene</i>	<i>Dibenzo-furan</i>	<i>Dibutyl Phthalate</i>	<i>1,2-Dichloro-propane</i>	<i>2,4-Dinitro-phenol</i>	<i>DEHP</i>	<i>Ethyl-benzene</i>	<i>Formal-dehyde</i>	<i>Hexane</i>	<i>Methanol</i>
KC-135 Aircraft Operations	–	–	–	–	–	0.08	0.01	0.63	–	–
Transient Aircraft	–	–	–	–	–	–	0.01	0.18	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	0.01	0.00	0.10	–	–
Aerospace Ground Support Equipment	–	–	–	0.01	0.25	0.00	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.00	–	–	–	–	–	0.00	–	0.00	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>0.00</b>	<b>–</b>	<b>–</b>	<b>0.01</b>	<b>0.25</b>	<b>0.10</b>	<b>0.01</b>	<b>0.91</b>	<b>0.00</b>	<b>–</b>

Source Type	Tons per Year									
	<i>Methylene Chloride</i>	<i>MIBK</i>	<i>MTBE</i>	<i>Naphthalene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propionaldehyde</i>	<i>Styrene</i>	<i>1,1,2,2-Tetrachloroethane</i>	<i>Tetra-chloro-ethene</i>
KC-135 Aircraft Operations	1.17	–	–	0.01	–	–	–	0.01	–	0.04
Transient Aircraft	–	–	–	0.02	–	–	–	0.01	–	–
On-Wing Aircraft Engine Testing - KC-135	0.15	–	–	0.00	–	–	–	0.00	–	0.00
Aerospace Ground Support Equipment	–	0.00	0.02	0.00	–	–	0.03	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.00	0.00	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>1.32</b>	<b>0.00</b>	<b>0.02</b>	<b>0.03</b>	<b>–</b>	<b>–</b>	<b>0.03</b>	<b>0.02</b>	<b>–</b>	<b>0.05</b>

Source Type	Tons per Year						
	<i>Toluene</i>	<i>1,1,1-Trichloro-ethane</i>	<i>Trichloro-ethene</i>	<i>2,2,4 Trimethyl-pentane</i>	<i>Vinyl Acetate</i>	<i>mp-Xylene</i>	<i>o-Xylene</i>
KC-135 Aircraft Operations	0.11	0.01	–	0.09	0.03	–	–
Transient Aircraft	0.02	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	0.01	0.00	–	0.01	0.00	–	–
Aerospace Ground Support Equipment	0.02	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.00	–	–	0.00	–	–	0.00
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Emissions<sup>a</sup></b>	<b>0.17</b>	<b>0.01</b>	<b>–</b>	<b>0.10</b>	<b>0.03</b>	<b>–</b>	<b>0.00</b>

<sup>a</sup> Data from 2008 Mobile Source Air Emissions Inventory for Altus Air Force Base (Weston Solutions, Inc. 2008), except point and area sources obtained from 2008 Air Emissions Inventory Turn – Around Document (ODEQ 2010) and Off-Base POV emissions calculated with the use of typical trip lengths. However, CO<sub>2</sub> emissions estimated with widely acceptable factors.

**Key:** CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMVs = government motor vehicles, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-25. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at McConnell AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-46A Aircraft Operations	34.63	157.55	1,034.50	54.09	3.35	2.84	163,451	4.52	5.08	150,110
On-Wing Aircraft Engine Testing - KC-46A	14.14	48.41	23.62	1.88	0.17	0.15	5,690	0.16	0.18	5,226
Aerospace Ground Support Equipment - KC-46A	0.38	2.74	3.11	0.12	0.46	0.42	608	0	0	557
KC-135 Aircraft Operations	10.89	176.49	291.09	27.06	1.47	1.47	82,089	2	3	75,389
Transient Aircraft Operations	11.89	52.46	97.63	8.46	6.72	6.72	22,513	1	1	20,676
On-Wing Aircraft Engine Testing - KC-135	2.03	27.92	44.75	3.56	0.19	0.19	10,787	0	0	9,907
Aerospace Ground Support Equipment - Existing Aircraft	1.17	8.41	9.56	0.37	1.41	1.29	1,868	0	0	1,710
GMVs/Nonroad Equipment	1.45	6.78	16.44	0.61	1.63	1.21	3,311	1	0	3,033
Privately-Owned Vehicles - On-Base	0.13	7.13	0.94	0.02	0.08	0.04	1,370.46	0.00	0.00	1,246
Privately-Owned Vehicles - Off-Base	0.74	34.60	6.10	0.10	0.73	0.37	7,045.00	0.01	0.00	6,406
Mobile Fuel Transfer Operations	0.13	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	9.08	13.62	0.31	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>77.60</b>	<b>531.55</b>	<b>1,541.37</b>	<b>96.55</b>	<b>16.21</b>	<b>14.71</b>	<b>298,734</b>	<b>9</b>	<b>9</b>	<b>274,259</b>
<b>Year 2012 Base Case Emissions</b>	<b>(40.79)</b>	<b>(335.90)</b>	<b>(493.25)</b>	<b>(40.43)</b>	<b>(12.89)</b>	<b>(11.63)</b>	<b>(127,960)</b>	<b>(4)</b>	<b>(4)</b>	<b>(117,551)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>36.81</b>	<b>195.65</b>	<b>1,048.11</b>	<b>56.12</b>	<b>3.32</b>	<b>3.08</b>	<b>170,774</b>	<b>5</b>	<b>5</b>	<b>156,708</b>
<b>PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Sedgwick County 2008 Emissions</b>	<b>27,732</b>	<b>103,426</b>	<b>20,495</b>	<b>1,016</b>	<b>43,292</b>	<b>6,874</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>3,225,354</b>
<b>Fractional Increase from Sedgwick County Emissions</b>	<b>0.001</b>	<b>0.002</b>	<b>0.05</b>	<b>0.06</b>	<b>0.0001</b>	<b>0.0004</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.05</b>
<b>Fractional Increase from Existing McConnell AFB</b>	<b>0.90</b>	<b>0.58</b>	<b>2.12</b>	<b>1.39</b>	<b>0.26</b>	<b>0.27</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>1.33</b>

**Table D.4-25. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-form	Chloro-methane	o-Cresol	p-Cresol
KC-46A Aircraft Operations	1.49	0.86	0.59	0.59	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-46A	0.61	0.35	0.24	0.24	–	–	–	–	–	–
Aerospace Ground Support Equipment - KC-46A	0.03	0.00	0.01	0.00	–	–	–	–	–	–
KC-135 Aircraft Operations	–	–	0.04	–	–	0.01	0.05	0.02	–	–
Transient Aircraft Operations	0.03	0.03	0.05	–	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	0.00	–	–	0.00	0.01	0.00	–	–
Aerospace Ground Support Equipment - Existing Aircraft	0.09	0.01	0.02	0.00	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>2.24</b>	<b>1.25</b>	<b>0.96</b>	<b>0.83</b>	–	<b>0.01</b>	<b>0.05</b>	<b>0.02</b>	–	–
<b>Year 2012 Base Case Emissions</b>	<b>(0.15)</b>	<b>(0.05)</b>	<b>(0.13)</b>	<b>(0.00)</b>	–	<b>(0.01)</b>	<b>(0.05)</b>	<b>(0.02)</b>	–	–
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.09</b>	<b>1.20</b>	<b>0.82</b>	<b>0.83</b>	–	–	–	–	–	–
<b>PSD Thresholds</b>	–	–	–	–	–	–	–	–	–	–
<b>Sedgwick County 2008 Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Sedgwick County Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Existing McConnell AFB</b>	<b>13.76</b>	<b>23.42</b>	<b>6.16</b>	<b>267.36</b>	–	–	–	–	–	–

**Table D.4-25. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	<i>Cumene</i>	<i>Dibenzo-furan</i>	<i>Dibutyl Phthalate</i>	<i>1,2-Dichloro-propane</i>	<i>2,4-Dinitro-phenol</i>	<i>DEHP</i>	<i>Ethyl-benzene</i>	<i>Formal-dehyde</i>	<i>Hexane</i>	<i>Methanol</i>
KC-46A Aircraft Operations	–	–	–	–	–	–	0.06	4.30	–	0.63
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	–	–	–	0.02	1.75	–	0.26
Aerospace Ground Support Equipment - KC-46A	–	–	–	0.00	0.06	0.00	–	–	–	–
KC-135 Aircraft Operations	–	–	–	–	–	0.08	0.01	0.63	–	–
Transient Aircraft Operations	–	–	–	–	–	–	0.01	0.18	–	–
On-Wing Aircraft Engine Testing - KC-135	–	–	–	–	–	0.01	0.00	0.10	–	–
Aerospace Ground Support Equipment - Existing Aircraft	–	–	–	0.00	0.18	0.00	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	–	–	–	<b>0.00</b>	<b>0.23</b>	<b>0.10</b>	<b>0.10</b>	<b>6.97</b>	–	<b>0.89</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.00)</b>	–	–	<b>(0.01)</b>	<b>(0.25)</b>	<b>(0.10)</b>	<b>(0.01)</b>	<b>(0.91)</b>	<b>(0.00)</b>	–
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>(0.00)</b>	–	–	<b>(0.00)</b>	<b>(0.02)</b>	<b>(0.00)</b>	<b>0.09</b>	<b>6.05</b>	<b>(0.00)</b>	<b>0.89</b>
<b>PSD Thresholds</b>	–	–	–	–	–	–	–	–	–	–
<b>Sedgwick County 2008 Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Sedgwick County Emissions</b>	–	–	–	–	–	–	–	–	–	–
<b>Fractional Increase from Existing McConnell AFB</b>	<b>(1.00)</b>	–	–	<b>(0.07)</b>	<b>(0.07)</b>	<b>(0.00)</b>	<b>5.97</b>	<b>6.62</b>	<b>(1.00)</b>	–

**Table D.4-25. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	<i>Methylene Chloride</i>	<i>MIBK</i>	<i>MTBE</i>	<i>Naphthalene</i>	<i>Phenol</i>	<i>POM</i>	<i>Propionaldehyde</i>	<i>Styrene</i>	<i>1,1,2,2-Tetrachloroethane</i>	<i>Tetrachloroethene</i>
KC-46A Aircraft Operations	–	–	–	0.19	0.25	–	–	0.11	–	–
On-Wing Aircraft Engine Testing - KC-46A	–	–	–	0.08	0.10	–	–	0.04	–	–
Aerospace Ground Support Equipment - KC-46A	–	0.00	0.00	0.00	–	–	0.01	–	–	–
KC-135 Aircraft Operations	1.17	–	–	0.01	–	–	–	0.01	–	0.04
Transient Aircraft Operations	–	–	–	0.02	–	–	–	0.01	–	–
On-Wing Aircraft Engine Testing - KC-135	0.15	–	–	0.00	–	–	–	0.00	–	0.00
Aerospace Ground Support Equipment - Existing Aircraft	–	0.00	0.01	0.00	–	–	0.02	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>1.32</b>	<b>0.00</b>	<b>0.02</b>	<b>0.30</b>	<b>0.36</b>	<b>–</b>	<b>0.02</b>	<b>0.17</b>	<b>–</b>	<b>0.05</b>
<b>Year 2012 Base Case Emissions</b>	<b>(1.32)</b>	<b>(0.00)</b>	<b>(0.02)</b>	<b>(0.03)</b>	<b>-</b>	<b>–</b>	<b>(0.03)</b>	<b>(0.02)</b>	<b>–</b>	<b>(0.05)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>–</b>	<b>(0.00)</b>	<b>(0.00)</b>	<b>0.27</b>	<b>0.36</b>	<b>–</b>	<b>(0.00)</b>	<b>0.15</b>	<b>–</b>	<b>–</b>
<b>PSD Thresholds</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Sedgwick County 2008 Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Fractional Increase from Sedgwick County Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Fractional Increase from Existing McConnell AFB</b>	<b>–</b>	<b>(0.07)</b>	<b>(0.10)</b>	<b>8.38</b>	<b>–</b>	<b>–</b>	<b>(0.07)</b>	<b>9.76</b>	<b>–</b>	<b>–</b>

**Table D.4-25. Summary of Total Annual Emissions Associated with the KC-46A FTU Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year						
	<i>Toluene</i>	<i>1,1,1-Trichloroethane</i>	<i>Trichloroethene</i>	<i>2,2,4 Trimethylpentane</i>	<i>Vinyl Acetate</i>	<i>mp-Xylene</i>	<i>o-Xylene</i>
KC-46A Aircraft Operations	0.22	–	–	–	–	0.10	0.06
On-Wing Aircraft Engine Testing - KC-46A	0.09	–	–	–	–	0.04	0.02
Aerospace Ground Support Equipment - KC-46A	0.00	–	–	–	–	–	–
KC-135 Aircraft Operations	0.11	0.01	–	–	0.09	0.03	–
Transient Aircraft Operations	0.02	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-135	0.01	0.00	–	–	0.01	0.00	–
Aerospace Ground Support Equipment - Existing Aircraft	0.01	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.48</b>	<b>0.01</b>	<b>–</b>	<b>–</b>	<b>0.10</b>	<b>0.17</b>	<b>0.08</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.17)</b>	<b>(0.01)</b>	<b>–</b>	<b>(0.10)</b>	<b>(0.03)</b>	<b>–</b>	<b>(0.00)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.31</b>	<b>–</b>	<b>–</b>	<b>(0.10)</b>	<b>0.07</b>	<b>0.17</b>	<b>0.08</b>
<b>PSD Thresholds</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Sedgwick County 2008 Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Fractional Increase from Sedgwick County Emissions</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
<b>Fractional Increase from Existing McConnell AFB</b>	<b>1.86</b>	<b>–</b>	<b>–</b>	<b>(1.00)</b>	<b>2.17</b>	<b>–</b>	<b>40.70</b>

**Key:** ( ) = parenthesis indicate negative numbers, AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMVs = government motor vehicles, NA = not applicable, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-26. KC-135/KC-46A Aircraft Operations at Clinton Sherman Industrial Airpark – McConnell AFB KC-46A FTU Scenario**

Scenario/Operation	Operations per Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
<b>Existing KC-135 <sup>a</sup></b>									
Closed Pattern - IFR	1,062	12.0	2.0	–	1.0	212	35	–	18
Closed Pattern - VFR	434	5.0	2.0	–	1.0	36	14	–	7
<b>Total TIMs - Existing KC-135</b>						<b>249</b>	<b>50</b>	<b>–</b>	<b>25</b>
<b>KC-46A - FTU <sup>a</sup></b>									
Closed Pattern - Radar & Initial to Overhead	347	12.0	2.0	–	1.0	69	12	–	6
Closed Pattern - VFR	142	5.0	2.0	–	1.0	12	5	–	2
<b>Total TIMs - KC-46A FTU</b>						<b>81</b>	<b>16</b>	<b>–</b>	<b>8</b>

<sup>a</sup> Source is SAIC 2013h.

**Key:** % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, TIM = Time in Mode, VFR = visual flight rules.

**Table D.4-27. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Clinton Sherman Industrial Airpark – McConnell AFB KC-46A FTU Scenario**

Scenario/Engine Setting	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Existing KC-135</b>										
55%	0.16	4.98	25.06	2.26	0.12	0.12	6,862	0	0	6,932
60%	0.03	0.91	5.79	0.49	0.03	0.03	1,494	0	0	1,509
Take-off	0.02	0.04	7.20	0.41	0.03	0.03	1,251	0	0	1,264
<b>Subtotal Existing KC-135</b>	<b>0.21</b>	<b>5.92</b>	<b>38.04</b>	<b>3.17</b>	<b>0.17</b>	<b>0.17</b>	<b>9,607</b>	<b>0</b>	<b>0</b>	<b>9,705</b>
<b>KC-46A - FTU</b>										
55%	0.08	1.12	16.14	0.93	0.05	0.04	2,814	0	0	2,842
60%	0.02	0.22	3.78	0.20	0.01	0.01	618	0	0	624
Take-off	0.02	0.11	6.05	0.19	0.01	0.01	566	0	0	572
<b>Subtotal KC-46A FTU</b>	<b>0.12</b>	<b>1.45</b>	<b>25.97</b>	<b>1.32</b>	<b>0.08</b>	<b>0.07</b>	<b>3,997</b>	<b>0</b>	<b>0</b>	<b>4,038</b>
Scenario/Engine Setting	Tons per Year									
	CO <sub>2</sub> e (mt)	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate
<b>Existing KC-135</b>										
55%	6,302	–	–	0.004	–	–	0.001	0.004	0.002	–
60%	1,372	–	–	0.001	–	–	0.000	0.001	0.000	–
Take-off	1,149	–	–	0.000	–	–	–	0.000	0.000	–
<b>Subtotal Existing KC-135</b>	<b>8,823</b>	<b>–</b>	<b>–</b>	<b>0.005</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>0.005</b>	<b>0.002</b>	<b>–</b>
<b>KC-46A - FTU</b>										
55%	2,584	0.004	0.002	0.001	0.001	–	–	–	–	–
60%	567	0.001	0.000	0.000	0.000	–	–	–	–	–
Take-off	520	0.001	0.000	0.000	0.000	–	–	–	–	–
<b>Subtotal KC-46A FTU</b>	<b>3,671</b>	<b>0.005</b>	<b>0.003</b>	<b>0.002</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>
Scenario/Engine Setting	Tons per Year									
	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene
<b>Existing KC-135</b>										
55%	–	–	0.006	0.001	0.023	–	–	0.101	–	–
60%	–	–	0.001	0.000	0.005	–	–	0.022	–	–
Take-off	–	–	0.001	–	0.003	–	–	0.001	–	–
<b>Subtotal Existing KC-135</b>	<b>–</b>	<b>–</b>	<b>0.008</b>	<b>0.001</b>	<b>0.030</b>	<b>–</b>	<b>–</b>	<b>0.124</b>	<b>–</b>	<b>–</b>
<b>KC-46A - FTU</b>										
55%	–	–	–	0.000	0.010	–	0.001	–	–	0.000
60%	–	–	–	0.000	0.002	–	0.000	–	–	0.000
Take-off	–	–	–	0.000	0.002	–	0.000	–	–	0.000
<b>Subtotal KC-46A FTU</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>0.014</b>	<b>–</b>	<b>0.002</b>	<b>–</b>	<b>–</b>	<b>0.001</b>
Scenario/Engine Setting	Tons per Year									
	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene
<b>Existing KC-135</b>										
55%	–	–	–	–	–	0.004	0.009	0.001	0.007	0.002
60%	–	–	–	–	–	0.001	0.002	0.000	0.001	0.000
Take-off	–	–	–	–	–	0.000	0.000	0.000	0.001	0.000
<b>Subtotal Existing KC-135</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>–</b>	<b>0.005</b>	<b>0.011</b>	<b>0.001</b>	<b>0.009</b>	<b>0.003</b>
<b>KC-46A - FTU</b>										
55%	0.001	–	–	0.000	–	–	0.001	–	–	0.000
60%	0.000	–	–	0.000	–	–	0.000	–	–	0.000
Take-off	0.000	–	–	0.000	–	–	0.000	–	–	0.000
<b>Subtotal KC-46A FTU</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.000</b>	<b>–</b>	<b>–</b>	<b>0.001</b>	<b>–</b>	<b>–</b>	<b>0.000</b>

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-28. KC-135/KC-46A Aircraft Operations at Lubbock Preston Smith International Airport – McConnell AFB KC-46A FTU Scenario**

Scenario/Operation	Operations/ Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
Existing KC-135 <sup>a</sup>									
Closed Pattern - IFR	506	12.0	2.0	–	1.0	101	17	–	8
Closed Pattern - VFR	206	5.0	2.0	–	1.0	17	7	–	3
Total TIMs - Existing KC-135						118	24	–	12
KC-46A - FTU <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	347	12.0	2.0	–	1.0	69	12	–	6
Closed Pattern - VFR	142	5.0	2.0	–	1.0	12	5	–	2
Total TIMs - KC-46A FTU						81	16	–	8

<sup>a</sup> Source is SAIC 2013h.**Key:** % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, VFR = visual flight rules.

**Table D.4-29. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Lubbock Preston Smith International Airport – McConnell AFB KC-46A FTU Scenario**

Scenario/Engine Setting	Tons per Year										
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e	
Existing KC-135											
55%	0.08	2.37	11.93	1.08	0.06	0.06	3,266	0	0	3,299	
60%	0.02	0.43	2.75	0.23	0.01	0.01	711	0	0	718	
Take-off	0.01	0.02	3.43	0.20	0.01	0.01	595	0	0	602	
Subtotal Existing KC-135	0.10	2.82	18.11	1.51	0.08	0.08	4,572	0	0	4,619	
KC-46A - FTU											
55%	0.08	1.12	16.14	0.93	0.05	0.04	2,814	0	0	2,842	
60%	0.02	0.22	3.78	0.20	0.01	0.01	618	0	0	624	
Take-off	0.02	0.11	6.05	0.19	0.01	0.01	566	0	0	572	
Subtotal KC-46A FTU	0.12	1.45	25.97	1.32	0.08	0.07	3,997	0	0	4,038	
Scenario/Engine Setting	Tons per Year										
	CO <sub>2</sub> e (mt)	Acetal-dehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-form	Chloro-methane	Dibutyl Phthalate	
Existing KC-135											
55%	2,999	–	–	0.002	–	–	0.000	0.002	0.001	–	
60%	653	–	–	0.000	–	–	0.000	0.000	0.000	–	
Take-off	547	–	–	0.000	–	–	–	0.000	0.000	–	
Subtotal Existing KC-135	4,199	–	–	0.003	–	–	0.001	0.002	0.001	–	
KC-46A - FTU											
55%	2,584	0.004	0.002	0.001	0.001	–	–	–	–	–	
60%	567	0.001	0.000	0.000	0.000	–	–	–	–	–	
Take-off	520	0.001	0.000	0.000	0.000	–	–	–	–	–	
Subtotal KC-46A FTU	3,671	0.005	0.003	0.002	0.002	–	–	–	–	–	
Scenario/Engine Setting	Tons per Year										
	1,2-Dichloro-propane	2,4-Dinitro-phenol	DEHP	Ethyl-benzene	Formal-dehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naph-thalene	
Existing KC-135											
55%	–	–	0.003	0.000	0.011	–	–	0.048	–	–	
60%	–	–	0.001	0.000	0.002	–	–	0.011	–	–	
Take-off	–	–	0.000	–	0.001	–	–	0.000	–	–	
Subtotal Existing KC-135	–	–	0.004	0.000	0.014	–	–	0.059	–	–	
KC-46A - FTU											
55%	–	–	–	0.000	0.010	–	0.001	–	–	0.000	
60%	–	–	–	0.000	0.002	–	0.000	–	–	0.000	
Take-off	–	–	–	0.000	0.002	–	0.000	–	–	0.000	
Subtotal KC-46A FTU	–	–	–	0.000	0.014	–	0.002	–	–	0.001	
Scenario/Engine Setting	Tons per Year										
	Phenol	POM	Propional-dehyde	Styrene	1,1,2,2-Tetra-chloro-ethane	Tetra-chloro-ethene	Toluene	1,1,1-Trichloro-ethane	Vinyl Acetate	mp-Xylene	o-Xylene
Existing KC-135											
55%	–	–	–	–	–	0.002	0.004	0.000	0.003	0.001	–
60%	–	–	–	–	–	0.000	0.001	0.000	0.001	0.000	–
Take-off	–	–	–	–	–	0.000	0.000	0.000	0.000	0.000	–
Subtotal Existing KC-135	–	–	–	–	–	0.003	0.005	0.001	0.004	0.001	–
KC-46A - FTU											
55%	0.001	–	–	0.000	–	–	0.001	–	–	0.000	0.000
60%	0.000	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Take-off	0.000	–	–	0.000	–	–	0.000	–	–	0.000	0.000
Subtotal KC-46A FTU	0.001	–	–	0.000	–	–	0.001	–	–	0.000	0.000

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-30. KC-135/KC-46A Aircraft Operations at Wichita Mid-Continent Airport – McConnell AFB KC-46A FTU Scenario**

Scenario/Operation	Operations/ Year	Engine Setting/Time in Mode per Operation (Minutes)				Engine Setting Annual Hours			
		55%	60%	Climbout	Takeoff	55%	60%	Climbout	Takeoff
Existing KC-135 <sup>a</sup>									
Closed Pattern - IFR	1,407	12.0	2.0	–	1.0	281	47	–	23
Closed Pattern - VFR	574	5.0	2.0	–	1.0	48	19	–	10
Total TIMs - Existing KC-135						329	66	–	33
KC-46A - FTU <sup>a</sup>									
Closed Pattern - Radar & Initial to Overhead	1,619	12.0	2.0	–	1.0	324	54	–	27
Closed Pattern - VFR	661	5.0	2.0	–	1.0	55	22	–	11
Total TIMs - KC-46A FTU						379	76	–	38

<sup>a</sup> Source is SAIC 2013h.**Key:** % = percent, FTU = Formal Training Unit, IFR = instrument flight rules, TIM = Time in Mode, VFR = visual flight rules.

**Table D.4-31. Annual Air Emissions from KC-135/KC-46A Aircraft Operations at Rick Husband Amarillo International Airport – McConnell AFB KC-46A FTU Scenario**

Scenario/Engine Setting	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e
<b>Existing KC-135</b>										
55%	0.22	6.59	33.19	3.00	0.16	0.16	9,087	0	0	9,180
60%	0.05	1.20	7.66	0.65	0.03	0.03	1,978	0	0	1,998
Take-off	0.02	0.05	9.53	0.55	0.04	0.04	1,657	0	0	1,674
<b>Subtotal Existing KC-135</b>	<b>0.28</b>	<b>7.84</b>	<b>50.38</b>	<b>4.19</b>	<b>0.23</b>	<b>0.23</b>	<b>12,722</b>	<b>0</b>	<b>0</b>	<b>12,852</b>
<b>KC-46A - FTU</b>										
55%	0.38	5.23	75.35	4.33	0.24	0.20	13,135	0	0	13,270
60%	0.08	1.03	17.66	0.95	0.05	0.05	2,883	0	0	2,913
Take-off	0.08	0.50	28.24	0.87	0.07	0.06	2,643	0	0	2,670
<b>Subtotal KC-46A FTU</b>	<b>0.54</b>	<b>6.76</b>	<b>121.25</b>	<b>6.15</b>	<b>0.36</b>	<b>0.30</b>	<b>18,662</b>	<b>1</b>	<b>1</b>	<b>18,852</b>

Scenario/Engine Setting	Tons per Year									
	CO <sub>2</sub> e (mt)	Acetaldehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetrachloride	Chloroform	Chloromethane	Dibutyl Phthalate
<b>Existing KC-135</b>										
55%	8,345	–	–	0.006	–	–	0.001	0.005	0.002	–
60%	1,817	–	–	0.001	–	–	0.000	0.001	0.001	–
Take-off	1,521	–	–	0.001	–	–	–	0.001	0.000	–
<b>Subtotal Existing KC-135</b>	<b>11,684</b>	–	–	<b>0.007</b>	–	–	<b>0.002</b>	<b>0.007</b>	<b>0.003</b>	–
<b>KC-46A - FTU</b>										
55%	12,063	0.016	0.009	0.006	0.006	–	–	–	–	–
60%	2,648	0.004	0.002	0.001	0.001	–	–	–	–	–
Take-off	2,427	0.003	0.002	0.001	0.001	–	–	–	–	–
<b>Subtotal KC-46A FTU</b>	<b>17,138</b>	<b>0.023</b>	<b>0.013</b>	<b>0.009</b>	<b>0.009</b>	–	–	–	–	–

Scenario/Engine Setting	Tons per Year									
	1,2-Dichloropropane	2,4-Dinitrophenol	DEHP	Ethylbenzene	Formaldehyde	Hexane	Methanol	Methylene Chloride	MTBE	Naphthalene
<b>Existing KC-135</b>										
55%	–	–	0.008	0.001	0.030	–	–	0.134	–	–
60%	–	–	0.002	0.000	0.006	–	–	0.029	–	–
Take-off	–	–	0.001	–	0.004	–	–	0.001	–	–
<b>Subtotal Existing KC-135</b>	–	–	<b>0.011</b>	<b>0.001</b>	<b>0.040</b>	–	–	<b>0.164</b>	–	–
<b>KC-46A - FTU</b>										
55%	–	–	–	0.001	0.047	–	0.007	–	–	0.002
60%	–	–	–	0.000	0.010	–	0.001	–	–	0.000
Take-off	–	–	–	0.000	0.009	–	0.001	–	–	0.000
<b>Subtotal KC-46A FTU</b>	–	–	–	<b>0.001</b>	<b>0.067</b>	–	<b>0.010</b>	–	–	<b>0.003</b>

Scenario/Engine Setting	Tons per Year										
	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene	Toluene	1,1,1-Trichloroethane	Vinyl Acetate	mp-Xylene	o-Xylene
<b>Existing KC-135</b>											
55%	–	–	–	–	–	0.006	0.011	0.001	0.009	0.003	–
60%	–	–	–	–	–	0.001	0.002	0.000	0.002	0.001	–
Take-off	–	–	–	–	–	0.001	0.001	0.000	0.001	0.000	–
<b>Subtotal Existing KC-135</b>	–	–	–	–	–	<b>0.007</b>	<b>0.014</b>	<b>0.002</b>	<b>0.012</b>	<b>0.004</b>	–
<b>KC-46A - FTU</b>											
55%	0.003	–	–	0.001	–	–	0.002	–	–	0.001	0.001
60%	0.001	–	–	0.000	–	–	0.001	–	–	0.000	0.000
Take-off	0.001	–	–	0.000	–	–	0.000	–	–	0.000	0.000
<b>Subtotal KC-46A FTU</b>	<b>0.004</b>	–	–	<b>0.002</b>	–	–	<b>0.003</b>	–	–	<b>0.002</b>	<b>0.001</b>

**Key:** % = percent, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, FTU = Formal Training Unit, mt = metric tons, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

**Table D.4-32. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at McConnell AFB – Year 2016**

Source Type	Tons per Year									
	VOC	CO	NO <sub>x</sub>	SO <sub>2</sub>	PM <sub>10</sub>	PM <sub>2.5</sub>	CO <sub>2</sub>	CH <sub>4</sub>	N <sub>2</sub> O	CO <sub>2</sub> e (mt)
KC-46A Aircraft Operations	50.07	201.74	837.57	45.42	2.92	2.49	136,814	3.79	4.25	125,648
On-Wing Aircraft Engine Testing - KC-46A	14.39	49.54	28.94	2.34	0.21	0.19	6,844	0.19	0.21	6,286
Aerospace Ground Support Equipment - KC-46A	0.59	4.22	4.80	0.18	0.71	0.65	937	0.14	0.01	858
Transient Aircraft	11.89	52.46	97.63	8.46	6.72	6.72	22,513	1	1	20,676
Aerospace Ground Support Equipment - Existing Aircraft	0.59	4.25	4.84	0.19	0.71	0.65	945	0	0	865
GMVs/Nonroad Equipment	1.09	5.08	12.32	0.45	1.22	0.91	2,480	0	0	2,271
Privately-Owned Vehicles - On-Base	0.10	5.34	0.70	0.02	0.06	0.03	1,026	0.00	0.00	933
Privately-Owned Vehicles - Off-Base	0.56	25.92	4.57	0.07	0.55	0.28	5,277	0.01	0.00	4,798
Mobile Fuel Transfer Operations	0.10	–	–	–	–	–	–	–	–	–
Point and Area Sources	–	6.80	10.20	0.23	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>79.37</b>	<b>355.33</b>	<b>1,001.56</b>	<b>57.36</b>	<b>13.09</b>	<b>11.91</b>	<b>176,837</b>	<b>5</b>	<b>5</b>	<b>162,334</b>
<b>Year 2012 Base Case Emissions</b>	<b>(40.79)</b>	<b>(335.90)</b>	<b>(493.25)</b>	<b>(40.43)</b>	<b>(12.89)</b>	<b>(11.63)</b>	<b>(127,960)</b>	<b>(4)</b>	<b>(4)</b>	<b>(117,551)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>38.58</b>	<b>19.44</b>	<b>508.31</b>	<b>16.93</b>	<b>0.20</b>	<b>0.29</b>	<b>48,878</b>	<b>1</b>	<b>2</b>	<b>44,783</b>
<b>PSD Thresholds</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>	<b>250</b>				
<b>Sedgwick County 2008 Emissions</b>	<b>27,732</b>	<b>103,426</b>	<b>20,495</b>	<b>1,016</b>	<b>43,292</b>	<b>6,874</b>				<b>3,225,354</b>
<b>Fractional Increase from Sedgwick County Emissions</b>	<b>0.001</b>	<b>0.000</b>	<b>0.02</b>	<b>0.02</b>	<b>0.00000</b>	<b>0.0000</b>				<b>0.01</b>
<b>Fractional Increase from Existing McConnell AFB</b>	<b>0.95</b>	<b>0.06</b>	<b>1.03</b>	<b>0.42</b>	<b>0.02</b>	<b>0.02</b>				<b>0.38</b>

**Table D.4-32. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Acetal-dehyde	Acrolein	Benzene	1,3-Butadiene	Carbon Disulfide	Carbon Tetra-chloride	Chloro-form	Chloro-methane	o-Cresol	p-Cresol
KC-46A Aircraft Operations	2.157	1.237	0.849	0.852	–	–	–	–	–	–
On-Wing Aircraft Engine Testing - KC-46A	0.620	0.356	0.244	0.245	-	-	-	-	-	-
Aerospace Ground Support Equipment - KC-46A	0.044	0.007	0.012	0.001	–	–	–	–	–	–
Transient Aircraft	0.028	0.032	0.051	-	–	–	–	–	–	–
Aerospace Ground Support Equipment - Existing Aircraft	0.059	0.009	0.016	0.001	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.001	–	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>2.909</b>	<b>1.641</b>	<b>1.173</b>	<b>1.099</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>	<b>-</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.152)</b>	<b>(0.051)</b>	<b>(0.134)</b>	<b>(0.003)</b>	<b>-</b>	<b>(0.009)</b>	<b>(0.052)</b>	<b>(0.022)</b>	<b>-</b>	<b>-</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>2.757</b>	<b>1.589</b>	<b>1.039</b>	<b>1.096</b>	<b>-</b>	<b>(0.009)</b>	<b>(0.052)</b>	<b>(0.022)</b>	<b>-</b>	<b>-</b>
<b>PSD Thresholds</b>										
<b>Sedgwick County 2008 Emissions</b>										
<b>Fractional Increase from Sedgwick County Emissions</b>										
<b>Fractional Increase from Existing McConnell AFB</b>	<b>18.13</b>	<b>30.93</b>	<b>7.77</b>	<b>353.47</b>		<b>(1.00)</b>	<b>(1.00)</b>	<b>(1.00)</b>		

**Table D.4-32. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Cumene	Dibenzo-furan	Dibutyl Phthalate	1,2-Dichloro-propane	2,4-Dinitro-phenol	DEHP	Ethyl-benzene	Formal-dehyde	Hexane	Methanol
KC-46A Aircraft Operations	–	–	–	–	–	–	0.088	6.216	–	0.912
On-Wing Aircraft Engine Testing - KC-46A	-	-	-	-	-	-	0.025	1.787	-	0.262
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	–	0.002	0.088	0.001	–
Transient Aircraft	–	–	–	–	–	–	0.005	0.181	–	–
Aerospace Ground Support Equipment - Existing Aircraft	–	–	–	0.002	0.120	0.001	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.000	–	–	–	–	–	0.000	–	0.000	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.000</b>	<b>-</b>	<b>-</b>	<b>0.002</b>	<b>0.120</b>	<b>0.001</b>	<b>0.121</b>	<b>8.271</b>	<b>0.001</b>	<b>1.174</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.000)</b>	<b>-</b>	<b>-</b>	<b>(0.005)</b>	<b>(0.249)</b>	<b>(0.102)</b>	<b>(0.014)</b>	<b>(0.914)</b>	<b>(0.000)</b>	<b>-</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>(0.000)</b>	<b>-</b>	<b>-</b>	<b>(0.003)</b>	<b>(0.130)</b>	<b>(0.100)</b>	<b>0.106</b>	<b>7.358</b>	<b>0.001</b>	<b>1.174</b>
<b>PSD Thresholds</b>										
<b>Sedgwick County 2008 Emissions</b>										
<b>Fractional Increase from Sedgwick County Emissions</b>										
<b>Fractional Increase from Existing McConnell AFB</b>	<b>(0.15)</b>			<b>(0.52)</b>	<b>(0.52)</b>	<b>(0.99)</b>	<b>7.43</b>	<b>8.05</b>	<b>12.53</b>	

**Table D.4-32. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year									
	Methylene Chloride	MIBK	MTBE	Naphthalene	Phenol	POM	Propionaldehyde	Styrene	1,1,2,2-Tetrachloroethane	Tetrachloroethene
KC-46A Aircraft Operations	–	–	–	0.273	0.367	–	–	0.156	–	–
On-Wing Aircraft Engine Testing - KC-46A	-	-	-	0.079	0.105	-	-	0.045	-	-
Aerospace Ground Support Equipment - KC-46A	–	–	–	–	–	0.000	0.006	0.000	–	–
Transient Aircraft	–	–	–	0.015	–	–	–	0.008	–	–
Aerospace Ground Support Equipment - Existing Aircraft	–	0.000	0.008	0.000	–	–	0.012	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	–	–	0.000	0.000	–	–	–	–	–	–
Point and Area Sources	–	–	–	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	-	0.000	0.008	0.368	0.472	0.000	0.018	0.209	-	-
<b>Year 2012 Base Case Emissions</b>	(1.315)	(0.000)	(0.017)	(0.032)	-	-	(0.025)	(0.016)	-	(0.048)
<b>Proposed Year 2016 minus Base Case Emissions</b>	(1.315)	(0.000)	(0.009)	0.336	0.472	0.000	(0.007)	0.194	-	(0.048)
<b>PSD Thresholds</b>										
<b>Sedgwick County 2008 Emissions</b>										
<b>Fractional Increase from Sedgwick County Emissions</b>										
<b>Fractional Increase from Existing McConnell AFB</b>	(1.00)	(0.52)	(0.51)	10.57			(0.29)	12.42		(1.00)

**Table D.4-32. Summary of Total Annual Emissions Associated with the KC-46A MOB 1 Scenario at McConnell AFB – Year 2016 (Continued)**

Source Type	Tons per Year						
	Toluene	1,1,1-Trichloroethane	Trichloroethene	2,2,4-Trimethylpentane	Vinyl Acetate	mp-Xylene	o-Xylene
KC-46A Aircraft Operations	0.324	–	–	–	–	0.143	0.084
On-Wing Aircraft Engine Testing - KC-46A	0.093	-	-	-	-	0.041	0.024
Aerospace Ground Support Equipment - KC-46A	0.009	–	–	–	–	–	0.006
Transient Aircraft	0.025	–	–	–	–	–	–
Aerospace Ground Support Equipment - Existing Aircraft	0.008	–	–	–	–	–	–
GMVs/Nonroad Equipment	–	–	–	–	–	–	–
Privately-Owned Vehicles - On-Base	–	–	–	–	–	–	–
Privately-Owned Vehicles - Off-Base	–	–	–	–	–	–	–
Mobile Fuel Transfer Operations	0.001	–	–	0.000	–	–	0.096
Point and Area Sources	–	–	–	–	–	–	–
<b>Total Proposed Emissions - 2016</b>	<b>0.461</b>	<b>-</b>	<b>-</b>	<b>0.000</b>	<b>-</b>	<b>0.183</b>	<b>0.210</b>
<b>Year 2012 Base Case Emissions</b>	<b>(0.168)</b>	<b>(0.013)</b>	<b>-</b>	<b>(0.097)</b>	<b>(0.031)</b>	<b>-</b>	<b>(0.002)</b>
<b>Proposed Year 2016 minus Base Case Emissions</b>	<b>0.293</b>	<b>(0.013)</b>	<b>-</b>	<b>(0.097)</b>	<b>(0.031)</b>	<b>0.183</b>	<b>0.208</b>
<b>PSD Thresholds</b>							
<b>Sedgwick County 2008 Emissions</b>							
<b>Fractional Increase from Sedgwick County Emissions</b>							
<b>Fractional Increase from Existing McConnell AFB</b>	<b>1.74</b>	<b>(1.00)</b>		<b>(1.00)</b>	<b>(1.00)</b>		<b>106.51</b>

**Key:** ( ) = parenthesis indicate negative numbers, AFB = Air Force Base, CH<sub>4</sub> = methane, CO = carbon monoxide, CO<sub>2</sub> = carbon dioxide, CO<sub>2</sub>e = carbon dioxide equivalent, GMVs = government motor vehicles, NA = not applicable, NO<sub>x</sub> = nitrogen oxides, N<sub>2</sub>O = nitrous oxide, PM<sub>10</sub> = particulate matter less than 10 microns in diameter, PM<sub>2.5</sub> = particulate matter less than 2.5 microns in diameter, PSD = Prevention of Significant Deterioration, SO<sub>2</sub> = sulfur dioxide, VOC = volatile organic compound.

## D.5 REFERENCES

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# APPENDIX E

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## BUILDINGS KNOWN TO CONTAIN ASBESTOS AND LEAD-BASED PAINT





## APPENDIX E BUILDINGS KNOWN TO CONTAIN ASBESTOS, LEAD-BASED PAINT, OR POLYCHLORINATED BIPHENYLS

Appendix E, Tables E-1 through E-6, summarizes the buildings that would be affected by the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) beddown-related demolition, renovation, or alteration; their years of construction; and their potential to contain toxic substances (asbestos-containing material [ACM], lead-based paint [LBP], and polychlorinated biphenyls [PCBs]). Tables E-1 and E-2 summarize the project-related toxic substance information for the FTU and MOB 1 scenarios at Altus Air Force Base (AFB). Table E-3 summarizes this information for the MOB 1 mission at Fairchild AFB. Table E-4 summarizes this information for the MOB 1 mission at Grand Forks AFB. Tables E-5 and E-6 summarize this information for the FTU and MOB 1 scenarios at McConnell AFB.

**Table E-1. Toxic Substances Associated with Projects for the KC-46A FTU Scenario at Altus AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 170	1972	X	<sup>b</sup>	<sup>c</sup>
<b>Renovation</b>				
Building 87, Group Headquarters and Mission Training	1986	X		<sup>c</sup>
Building 394, Contractor Supply Storage	1955	X	<sup>b</sup>	<sup>c</sup>
<b>Additions/Alterations</b>				
Building 285, Tail Enclosure and Tool Crib Expansion	1956	X	<sup>b</sup>	<sup>c</sup>
Building 193, Squadron Operations/Aircraft Maintenance Unit	1987	X		<sup>c</sup>
Building 518, Tail Enclosure and Fuel Cell Expansion	1971	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>

<sup>a</sup> Building assumed to potentially contain ACM based on construction year of 1987 or older (i.e., year that Building 193, which has been positively identified as having ACM, was constructed).

<sup>b</sup> Building assumed to potentially contain LBP. Although no LBP surveys have been conducted, buildings constructed prior to 1978 may have LBP.

<sup>c</sup> None of the electrical transformers have PCB-containing oil (Wallace 2013).

**Key:** X = Toxic substance known to occur in the building.

**Table E-2. Toxic Substances Associated with Projects for the KC-46A MOB 1 Scenario at Altus AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 82	1955	X	<sup>b</sup>	<sup>c</sup>
Building 171	1984	<sup>a</sup>		<sup>c</sup>
Building 551	1991			<sup>c</sup>
Building 554	1991			<sup>c</sup>
Building 557	1991			<sup>c</sup>
Building 563	1991			<sup>c</sup>
Building 564	1991			<sup>c</sup>
Building 565	1991			<sup>c</sup>
<b>Renovation</b>				
Building 87, Wing Headquarters (Operations Group, Air National Guard, and Air Force Reserve Command)	1986	X		<sup>c</sup>
Building 170, Aircraft Parts Storage/Contractor Supplies	1972	X	<sup>b</sup>	<sup>c</sup>
Building 285, Construct Interior Wall and Expand Hydraulic Shop	1956	X	<sup>b</sup>	<sup>c</sup>
<b>Additions/Alterations</b>				
Building 369, Add Vault	1952	X	<sup>b</sup>	<sup>c</sup>
Building 156, Gym Addition	1956	X	<sup>b</sup>	<sup>c</sup>

<sup>a</sup> Building assumed to potentially contain ACM based on construction year of 1987 or older (i.e., year that Building 193, which has been positively identified as having ACM, was constructed).

<sup>b</sup> Building assumed to potentially contain LBP. Although no LBP surveys have been conducted, buildings constructed prior to 1978 may have LBP.

<sup>c</sup> None of the electrical transformers have PCB-containing oil (Wallace 2013).

**Key:** X = Toxic substance known to occur in the building.

**Table E-3. Toxic Substances Associated with Projects for the KC-46A MOB 1 Mission at Fairchild AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 1011	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 1013	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 1015	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 1017	1955	<i>a</i>	<i>b</i>	<i>c</i>
Building 1018	2001			
Building 1019	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 2120	1943	<i>a</i>	<i>b</i>	<i>c</i>
<b>Renovation</b>				
Building 1001, Fuselage Trainer	1955	<i>a</i>	<i>b</i>	<i>c</i>
Building 1003, Cargo Deployment Function	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 1025, Vehicle Servicing	1952	<i>a</i>	<i>b</i>	<i>c</i>
Building 1037, Transitional Wash Rack	1955	<i>a</i>	<i>b</i>	<i>c</i>
Building 2005, Squadron Operations and Aircraft Maintenance Unit	1997			
Building 2007, Squadron Operations and Aircraft Maintenance Unit	1998			
Building 2040, Operations Support Squadron and Aircraft Flight Equipment	1990			
Building 2050, General Maintenance Hangar	1943	X	X	<i>c</i>
Building 2090, Aircraft Flight Equipment	2000			
Building 2097, Squadron Operations and Aircraft Maintenance Unit	1998			
Building 2272, Dormitory Conversion	1986			
Building 2245	1943	<i>a</i>	<i>b</i>	<i>c</i>
<b>Additions/Alterations</b>				
Building 2045, Logistics Readiness Squadron	2002			
Building 2048, Weapons System Trainers, Boom Operator Trainers	1943	<i>a</i>	<i>b</i>	<i>c</i>

<sup>a</sup> Building assumed to potentially contain ACM. Thermal system insulation and surfacing material found in buildings constructed no later than 1980 are presumed ACMs (Fairchild AFB 2011a).

<sup>b</sup> Building assumed to potentially contain LBP. An LBP survey is conducted by a contractor prior to any renovation or demolition work at pre-1980 facilities at Fairchild AFB (Fairchild AFB 2011b).

<sup>c</sup> Fluorescent light ballasts in building constructed prior to 1979 that are not labeled PCB-free or are missing date-of-manufacture labels are assumed to contain PCBs and would be removed and handled in accordance with Federal and state regulations and the base Hazardous Waste Management Plan (Fairchild AFB 2011c).

**Key:** X = Toxic substance known to occur in the building.

**Table E-4. Toxic Substances Associated with Projects for the KC-46A MOB 1 Mission at Grand Forks AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 531	1957	<i>a</i>	<i>b</i>	<i>c</i>
Building 635	1973	<i>a</i>	<i>b</i>	<i>c</i>
<b>Renovation</b>				
Building 221, Dormitory	1958	<i>a</i>	<i>b</i>	<i>c</i>
Building 307, Air National Guard Wing Headquarters	1959	<i>a</i>	<i>b</i>	<i>c</i>
Building 528, Base Operations	1957	<i>a</i>	<i>b</i>	<i>c</i>
Building 602, Remotely Piloted Aircraft Wing	1959	<i>a</i>	<i>b</i>	<i>c</i>
Building 607, Operations Group/Operations Support Squadron/Aircraft Maintenance Squadron	1959	<i>a</i>	<i>b</i>	<i>c</i>
Building 629, Squadron Operations/Aircraft Maintenance Unit	1997			<i>c</i>
Building 631, Squadron Operations/Aircraft Maintenance Unit	1998			<i>c</i>
Building 670, Supply Shop	1990			<i>c</i>
<b>Additions/Alterations</b>				
Building 556, Flight Stimulator (Weapons System Trainers, Boom Operator Trainers)	1983			<i>c</i>
Building 622, Composite Shop	1961	<i>a</i>	<i>b</i>	<i>c</i>
Building 649, General Maintenance Hangar (3-bay)/Alternate Mission Equipment	1987			<i>c</i>
Building 661, Aerospace Ground Equipment	1988			<i>c</i>

<sup>a</sup> Buildings constructed before 1980 are assumed to potentially have ACM (thermal system insulation and asphalt and vinyl flooring materials) (AFI 32-1052).

<sup>b</sup> Building is assumed to have LBP. All painted surfaces of buildings constructed before 1980 shall be assumed to contain LBP unless the paint has been tested and determined to be lead-free (Grand Forks AFB 2003).

<sup>c</sup> None of the transformers at Grand Forks AFB have PCB-containing oil (Grand Forks AFB 2009).

**Table E-5. Toxic Substances Associated with Projects for the KC-46A FTU Scenario at McConnell AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 977	1977	<i>a</i>	<i>b</i>	<i>c</i>
Building 978	1974	X	<i>b</i>	<i>c</i>
Building 984	1988	<i>a</i>		<i>c</i>
Building 985	1987	<i>a</i>		<i>c</i>
Building 1110	1952	X	<i>b</i>	<i>c</i>
Building 1122	1958	<i>a</i>	<i>b</i>	<i>c</i>
<b>Renovation</b>				
Building 840, Squadron Operations and Aircrew Flight Equipment	2003			<i>c</i>
<b>Additions/Alterations</b>				
Building 1129, Composite Repair Facility	1966	X	<i>b</i>	<i>c</i>
Building 1170, Director of Maintenance Office	1988	X		<i>c</i>

<sup>a</sup> Building assumed to potentially contain ACM, based on construction year of 1988 or older (i.e., year that Building 1170, which has been positively identified as having ACM, was constructed).

<sup>b</sup> Building is assumed to potentially contain LBP. Although no LBP surveys have been conducted, buildings constructed prior to 1978 may have LBP.

<sup>c</sup> None of the electrical transformers have PCB-containing oil (Pettus 2013).

**Key:** X=Toxic substance known to occur in the building.

**Table E-6. Toxic Substances Associated with Projects for the KC-46A MOB 1 Scenario at McConnell AFB**

Project	Year Constructed	ACM	LBP	PCBs
<b>Demolition</b>				
Building 973	1970	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
Building 977	1977	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
Building 978	1974	X	<sup>b</sup>	<sup>c</sup>
Building 984	1988	<sup>a</sup>		<sup>c</sup>
Building 985	1987	<sup>a</sup>		<sup>c</sup>
Building 1101	1991			<sup>c</sup>
Building 1102	Unknown			
Building 1106	1954	X	<sup>b</sup>	<sup>c</sup>
Building 1110	1952	X	<sup>b</sup>	<sup>c</sup>
Building 1122	1958	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
<b>Renovation</b>				
Building 1108, Air Transportable Galley/Latrine/Seat Pallet Facility	1966	X	<sup>b</sup>	<sup>c</sup>
Building 1094, 2/3 Weapons System Trainers and 2 Boom Operator Trainers	1988	<sup>a</sup>		<sup>c</sup>
Building 1129, Composite Shop	1966	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
Building 840, Squadron Operations/Aircrew Flight Equipment	2003			<sup>c</sup>
Building 1183, Squadron Operations/Aircrew Flight Equipment	1998			<sup>c</sup>
Building 1185, Squadron Operations	2001			<sup>c</sup>
Building 1186, Squadron Operations/Aircrew Flight Equipment	1999			<sup>c</sup>
Building 850, Air Force Reserve Command Wing Headquarters	Unknown			
Building 1218, Operations Group Headquarters	1942	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
Building 1107, Fleet Services	1954	X	<sup>b</sup>	<sup>c</sup>
Building 1166, Interior Modifications for Data and Voice Communications	1976	X	<sup>b</sup>	<sup>c</sup>
Building 1171, Move Aircraft Electrical and Environmental Systems Testing Equipment from Building 1106	1968	X	<sup>b</sup>	<sup>c</sup>
Building 1176, Move Hydraulic Test Stand from Building 1106	1967	<sup>a</sup>	<sup>b</sup>	<sup>c</sup>
<b>Additions/Alterations</b>				
Building 1092, 1 Weapons System Trainer and 1 Boom Operator Trainer	2000			<sup>c</sup>
Building 1220, Mobility Bag Storage Addition	1988	<sup>a</sup>		<sup>c</sup>
Building 852, Maintenance Training Facility	Unknown			

<sup>a</sup> Building assumed to potentially contain ACM based on construction year of 1988 or older (i.e., year that Building 1170, which has been positively identified as having ACM, was constructed).

<sup>b</sup> Building assumed to potentially contain LBP. Although no LBP surveys have been conducted, buildings constructed prior to 1978 may have LBP.

<sup>c</sup> None of the electrical transformers have PCB-containing oil (Pettus 2013).

Key: X=Toxic substance known to occur in the building.

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## **PUBLIC DOCUMENTS**

### **Air Force Instructions**

AFI 32-1052 – Facility Asbestos Management

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# **RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

## **Introduction**

The United States Air Force (USAF) is issuing this Record of Decision (ROD) for the KC-46A Formal Training Unit (FTU) and First Main Operating Base (MOB 1) Beddown Environmental Impact Statement (EIS) (*Federal Register* (FR), Vol. 79, No. 55, EIS No. 20140074, page. 15741, March 21, 2014). In making this decision, the information, analysis, and public comments contained in the KC-46A FTU and MOB 1 Beddown Final EIS (FEIS), along with other relevant matters, were considered.

This ROD is prepared in accordance with the Council on Environmental Quality (CEQ) regulations implementing the National Environmental Policy Act (NEPA) at Title 40 *Code of Federal Regulations* (CFR) §1505.2, (*Record of decision in cases requiring environmental impact statements*) and 32 CFR§989, Environmental Impact Analysis Process (EIAP). The USAF is the Lead Agency and there are no cooperating agencies.

Specifically, this ROD:

- States the USAF's decision (page 1 and 10);
- Identifies alternatives considered by the USAF in reaching the decision (page 2) and specifies the alternative considered to be environmentally preferable (page 2);
- Identifies and discusses relevant factors that were considered in making the decision among the alternatives, and states how those factors entered into the decision (page 3); and
- States whether all practicable means to avoid or minimize environmental harm from the selected alternative were adopted, and if not, why they were not adopted, and summarizes the applicable mitigation (see pages 4 through 10).

## **Decision**

The USAF will, by this decision, beddown up to eight (8) KC-46A Primary Aerospace Vehicles Authorized (PAA) under Air Education and Training Command (AETC) for the FTU at Altus Air Force Base (AFB), OK and thirty-six (36) PAA under Air Mobility Command (AMC) for the MOB 1 at McConnell AFB, KS. (ROD, page 10).

## **Background**

For more than 50 years, the KC-135 Stratotanker has served as the aerial refueling backbone to project U.S. global reach and combat power. The U.S. Congress authorized and appropriated funds supporting the USAF's selection of the KC-46A as the newest aerial refueling aircraft to replace a portion of the aging fleet of KC-135s. Congress funded a total aircraft inventory of up to 179 KC-46A aircraft by 2028 to correct deficiencies, update the fleet, enhance operations, and increase mission effectiveness. The new KC-46A will provide updated technology designed to enhance operations and increase mission effectiveness to support USAF, Navy, Marine Corps, and allies who rely on tanker range and flexibility to strengthen the coalition mission.

This basing action is only part of the USAF's program to replace the older KC-135 aircraft. This ROD focuses on the location for the USAF's KC-46A FTU and MOB 1. The National Guard

## **RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

Bureau is preparing a separate EIS that will support an independent decision to beddown twelve (12) KC-46A aircraft at a Second Main Operating Base (MOB 2) to be operated by the Air National Guard (ANG). Following these initial beddown actions, the USAF will plan additional beddown actions in the future for the remaining KC-46A aircraft.

### **Alternative Identification**

As more fully described in the FEIS (Volume I, pages 2-2 through 2-4, §2.2), AMC presented the Lead Command Intent for the KC-46A to the Secretary of the Air Force (SecAF) in September 2011. This Lead Command Intent included planning conventions that described the proposed basing action tenets, force structure mix, and basing timelines. These planning conventions included the critical information that would be used to shape and inform decisions made throughout the KC-46A Strategic Basing Process. Initial screening yielded a defined enterprise of 54 bases to be evaluated for the FTU and MOB 1 beddowns.

In 2012, AMC presented objective screening criteria to the SecAF. The approved screening criteria were used to screen the enterprise of 54 bases to identify those bases' capacity to successfully support the FTU and MOB 1 missions. The objective criteria included mission, capacity, environmental considerations, and cost.

The Strategic Basing Process described above resulted in the identification of two alternative bases for consideration for the KC-46A FTU mission and four alternative bases for the MOB 1 mission. Although Altus AFB and McConnell AFB were identified as alternative bases for both the FTU and MOB 1 missions, neither base would be selected to host both missions because of the inherent conflicts and capacity issues associated with beddown of both training and operations squadrons at a single base.

The basing alternatives considered were:

- FTU Scenario
  - Altus AFB, Oklahoma
  - McConnell AFB, Kansas
- MOB 1 Scenario
  - Altus AFB, Oklahoma
  - Fairchild AFB, Washington
  - Grand Forks AFB, North Dakota
  - McConnell AFB, Kansas

The No Action Alternative was evaluated for each of the alternative basing locations and constitutes the baseline conditions at each alternative location and other constraints (see FEIS, Volume I, page 2-54, §2.5).

### **Environmentally Preferred Alternative**

The environmentally preferred alternative is considered to be the No Action Alternative. The No Action Alternative constitutes the baseline conditions at each alternative location and would not substantially change existing environmental conditions.

# **RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

## **Basis of Decision**

Altus AFB was selected for the FTU mission because it provides training opportunities with both tankers and other heavy receiver aircraft, has available infrastructure capacity and extensive fuels dispensing capability, and requires considerably less new construction. In addition, KC-135 aircraft are currently located at Altus AFB.

McConnell AFB was selected for the MOB 1 mission because it has the lowest military construction costs and is located in a region of high air refueling receiver demand. McConnell AFB currently has 44 KC-135 aircraft and will replace those aircraft with 36 KC-46A aircraft which would reduce manpower authorizations.

## **Public Involvement**

Public involvement was integral to the USAF's development of this EIS. Public and agency comments were received and considered, including those received during scoping, at public hearings, and during the public comment period on the Draft EIS.

Information reflecting public involvement can be found in the FEIS (FEIS, Volume I, pages 1-6 to 1-8, §1.5; Volume I, Chapter 6). Furthermore, FEIS Volume II, Appendix A, provides public involvement documentation as well as copies of comments received during the Draft EIS public comment period. Public notices and meetings included:

- Notice of Intent: Published March 26, 2013, in the FR, Volume 78, Number 58, page 18325.
- Scoping Period: Initiated March 26, 2013, and ended May 17, 2013. Scoping meetings were held near each of the four bases in Oklahoma, Washington, North Dakota and Kansas.
- Draft EIS Notice of Availability (NOA): Published October 25, 2013, in the FR, Volume 78, Number 207, page 63977.
- Public Comment and Review Period: A 45-day comment period was initiated with the NOA publication in the FR and ended on December 9, 2013.
- Public Hearings: During the public comment period, four hearings were held near each of the four bases in Oklahoma, Washington, North Dakota and Kansas.
- FEIS NOA: Published in the FR on March 21, 2014, Volume 79, No. 55, EIS No. 20140074, page. 15741. This initiated the mandatory 30-day waiting period prior to ROD signature.

## **Agency Coordination and Consultation**

As described more completely in the FEIS (Volume II, Appendix A), the USAF coordinated and consulted with Federal and state agencies and Federally Recognized Tribes (Tribes). The Federal and state agencies responsible for biological and cultural resources were contacted early in the environmental planning process and received USAF notification of the project in March 2013. The USAF consulted on all of the alternatives in the FEIS. However, the descriptions which follow below describe only the consultations associated with the two selected alternatives, Altus AFB for the FTU and McConnell AFB for MOB 1.

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Regulatory consultations included informal consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act. The USAF determined, through informal consultation with the USFWS, that there are no Federal or state threatened or endangered species in the regions of influence at Altus AFB and McConnell AFB. Therefore, no further consultation was required.

Pursuant to Section 106 of the National Historic Preservation Act (NHPA), the USAF initiated consultation with the State Historic Preservation Offices (SHPOs) in Oklahoma and Kansas. For the FTU mission at Altus AFB, the Oklahoma SHPO has concurred with the USAF determination of no adverse effect, concluding the Section 106 consultation process (FEIS Volume II, Appendix A, page A.5-6). For the MOB 1 mission at McConnell AFB, the USAF has signed a Memorandum of Agreement (MOA) with the Kansas SHPO agreeing to measures that mitigate the adverse effect on historic properties resulting from implementation of the MOB 1 mission (FEIS, Volume II, Appendix A, pages A.5-35-A.5-38). In addition to the coordination and consultation with Federal agencies, the USAF also completed government-to-government consultations with potentially affected Tribes.

For the FTU mission at Altus AFB, no adverse Section 106 impacts to tribal resources are anticipated. Consultation with 10 tribes resulted in agreement with the USAF finding of no adverse impact. Section 106 consultation for the KC-46A FTU mission at Altus AFB is complete (FEIS, Volume II, Appendix A, page A.3-1, §A.3; pages A.4-1 to A.4-7, §A.4).

For the MOB 1 mission at McConnell AFB, no adverse Section 106 impacts to tribal resources are anticipated. Consultation with 12 tribes resulted in agreement with the USAF finding of no adverse impact. Section 106 consultation for the KC-46A MOB 1 mission at McConnell AFB is complete (FEIS, Volume II Appendix A, pages A.3-1 to A.3-4, §A.3; pages A.4-18 to A.4-22 §A.4).

No agency coordination or consultation was required for air quality. Both Altus AFB and McConnell AFB are located in attainment areas; therefore, a general conformity determination was not required for implementation of the FTU or MOB 1 mission at either base.

### **Mitigations and Management Actions**

The USAF considered and adopted all practicable means to avoid or minimize environmental harm at both installations. For the purposes of this ROD and future mitigation planning, management actions are defined as those actions that are built or designed into the proposed action and alternatives and either prevent or minimize impacts.

Specific management actions (i.e., those required by regulation or USAF guidance and instructions) to facilitate the implementation of the decision were identified in the FEIS and will be carried forward and implemented (FEIS, Volume I, pages 2-67 through 2-70; §2.9). Mitigation measures and management actions are summarized below by their applicable environmental resource areas. Compliance laws and regulations administered by the US EPA and other regulatory and/or state environmental quality agencies are mandated, and although the laws and regulations have mitigating effects, they are not considered discretionary with respect to Air Force decision making.

Given the early developmental stage of the KC-46A program, identification of new data and information relative to the KC-46A may arise and it is possible that the impacts identified in the

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FEIS (Volume I, pages 2-55 through 2-62, §2.7, Table 2-21) may be different from those expected. An understanding of various aspects that are part of a complex interrelated KC-46A operational environment may not be achieved without a more long-term process built around a continuous cycle of evaluation, learning, and improvement over time.

To accommodate this continuous cycle and to track management actions and mitigation application, within 90 days of the signature of this ROD, AMC and AETC will develop mitigation plans that identify principal and subordinate organizations having responsibility for oversight and execution of specific mitigation and management actions. In no case will an impact-inducing action be taken or implemented, prior to the applicable mitigation (defined below) being put in place.

The plans will include, but not be limited to, the following:

- Identification of the specific actions;
- Identification of the responsible organization for each action;
- Timing for execution of the actions, and;
- Definition of the adaptive management approach to be used.

Within certain parameters, the USAF may develop an adaptive management program as part of its overarching mitigation and monitoring program<sup>1</sup>. In doing so, the USAF would follow the President's Council on Environmental Quality mitigation and monitoring guidance<sup>2</sup> and other legal and generally accepted practices.

Furthermore, the USAF intent is to provide flexibility in its adaptive management approach in order to comply with regulatory requirements and allow for considered adaptations. Where the proposed use of adaptations are considered, the USAF will, before adapting, fully consider whether or not the adaptation triggers the need for more full analysis under NEPA and the USAF's EIAP (e.g., supplementation, tiering, etc.).

### ***Management Actions***

The USAF has required the KC-46 to meet FAA Part 36, Stage 4 noise levels (the most restrictive commercial aircraft noise level standard) and International Congress of Aeronautical Organizations, Committee of Environmental Protection (CAEP)/6 air contaminant emission limits (FEIS, pages 1-4 to 1-5, §1.4.2).

As described in the FEIS (Volume I, Pages 4-1 to 4-123), management actions applicable to both Altus AFB for the FTU mission and McConnell AFB for the MOB 1 mission are listed below by each of the FEIS resource areas.

### **Noise**

In Table 2-23 on page 2-68 in the FEIS, the 2<sup>nd</sup> bullet under Altus FTU Noise should reflect 20 percent rather than 10 percent total airfield operations between 10:00 PM and 7:00 AM.

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<sup>1</sup> In furtherance of NEPA's Section 101 goals to "protect, restore, and enhance the environment" (40 Code of Federal Regulations [CFR] 1500.1(c))

<sup>2</sup> "Appropriate Use of Mitigation and Monitoring and Clarifying the Appropriate Use of Mitigated Findings of No Significant Impact," January 14, 2011

## RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN

Table 2-23 on page 2-68 in the FEIS, the McConnell FTU discussion should include a bullet reading "KC-46 aircrews would conduct about 20 percent of total airfield operations between 10:00 P.M. and 7:00 A.M."

### **Altus AFB FTU Mission**

- KC-46A operations will mirror existing tanker operations making use of traffic patterns to the east and west of Altus AFB (FEIS, Volume I, pages 4-1 to 4-2, §4.1.1).
- The KC-46A will be operated at the same auxiliary airfields currently used by Altus based KC-135 aircraft and at about the same frequency. The KC-46A will use the same flight routes to access the auxiliary airfields and will operate on the same flight tracks that are used by the KC-135 aircraft and at about the same frequency.
- Auxiliary airfields will generally not be used by the KC-46A between 10:00 PM and 7:00 AM (FEIS, Volume I, page 4-5, §4.1.1).
- Approximately 20 percent of the total KC-46A operations will be flown between 10:00 PM and 7:00 AM. (FEIS, Volume I, page 4-2, §4.1.1).

### **McConnell AFB MOB 1**

- KC-46A operations will mirror existing tanker operations making use of existing traffic patterns (FEIS, Volume I, page 4-89, §4.4.1).
- KC-46A will limit night time operations (between 10:00 PM and 7:00 AM) to 10 percent of total airfield operations (FEIS, Volume I, page 4-89, §4.4.1).

### **Air Quality**

- Employ fugitive dust control and soil retention practices (FEIS, Volume I, page 4-9, §4.1.2) including:
  - Water trucks to keep all areas of vehicle movement damp enough to prevent dust from leaving the construction area.
  - Minimize the amount of disturbed ground area at a given time.
  - Suspension of all soil disturbance activities when winds exceed 25 miles per hour or when visible dust plumes emanate from the site.
  - Designating personnel to monitor the dust control program and to order increased watering, as necessary, to minimize the generation of dust.

### **Safety**

- Existing KC-135 emergency fuel jettison locations and procedures will be used for all KC-46A missions (FEIS, Volume I, page 2-9, §2.3.1.4 and page 2-11, §2.3.2.4; page 3-8, §3.1.31, and page 3-68, §3.4.3.1; Volume II, pages B-14 and B-15, §B.3.3.1).
- Emergency and mishap response plans for both installations will be updated to address the needed procedures and response actions specific to the KC-46A airframe (FEIS, Volume I, page 4-16, §4.1.3.1.2, and page 4-100, §4.4.3.2.2).

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## **Soils and Water**

- Update installation Storm Water Pollution Prevention Plans at both installations to reflect new KC-46A building construction as required by state and federal Clean Water Act requirements (FEIS, Volume I, page 4-17, §4.1.4.1 and page 4-102, §4.4.4.2).
- Silt fence, interceptor trenches, hay bales, or other suitable erosion and sediment control measures will be used during construction. At the completion of construction, re-vegetation of disturbed areas will occur as soon as practical (FEIS, Volume I, pages 4-17, 4-24 and 4-102, §4.1.4.1 and §4.4.4.2).
- After construction, all disturbed areas will be re-graded to pre-construction contours (FEIS, Volume I, pages 4-17, 4-24, 4-55, 4-75, 4-79 and 4-102, 4-109, 4-111 §4.1.4.1, §4.1.8.1.3, §4.1.8.3.3, §4.2.8.3, §4.3.5.4, §4.3.8.3 and §4.4.4.2, §4.4.8.1.3, §4.4.8.2.3).

## **McConnell AFB MOB 1 Mission**

- Continue best management practices<sup>3</sup> to reduce stormwater runoff containing deicing fluid. These will include monitoring, inspection, and replacement of valves, and flushing of deicing system prior to opening diversion valves (FEIS, Volume I, page 4-101, §4.4.4.2).
- The proposed addition to Building 1220 is located in a 100-year floodplain. To the maximum extent practical, work in the 100-year floodplain would be minimized (FEIS, Volume I, page 4-102, §4.4.4.2) (See FONPA page 9 of ROD).
- The proposed addition to Building 1220 will be constructed above the base flood level (FEIS, Volume I, page 4-103, §4.4.4.2).

## **Biological Resources**

- Continue adherence to Bird/Wildlife Aircraft Strike Hazard program (FEIS, Volume I, pages 4-19 and 4-104, §4.1.5.1.2 and §4.4.5.2.2).

## **Cultural Resources**

- Track results of government-to-government consultation with tribes (FEIS, Volume I, page 2-69).
- In the case of unanticipated or inadvertent cultural resources discoveries, the USAF would comply with Section 106 of the NHPA and follow the standard operating procedures outlined in the Integrated Cultural Resource Management Plan (ICRMP) (FEIS, Volume I, pages 4-20 and 4-106, §4.1.6.1 and §4.4.6.2).

## **Infrastructure**

- Incorporate Leadership in Energy and Environmental Design (LEED) and sustainable development concepts into construction projects to achieve optimum resource efficiency, sustainability, and energy conservation, except to the extent limited or prohibited by law (FEIS, Volume I, page 2-4, §2.3).

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<sup>3</sup> 32 CFR §989.22(a)

## **RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

- Continue and enhance recycling and reuse programs to accommodate waste generated by the KC-46A beddown (FEIS, Volume I, pages 4-25 and 4-112, §4.1.8.1.6 and §4.4.8.2.6).

### **Hazardous Materials and Waste**

- Update Hazardous Waste Management Plans at both installations to account for any new and/or changed waste streams or new procedures, if any, for managing hazardous materials and wastes associated with KC-46A aircraft (FEIS, Volume I, page 2-70, Table 2-23).

### **Socioeconomics**

- Complete Housing Requirements and Market Analyses (HRMA) at both installations (FEIS, Volume I, page 2-61, Table 2-21).

### **Mitigation**

#### **McConnell AFB MOB 1 Mission**

- McConnell AFB has signed a Memorandum of Agreement (MOA) with the SHPO regarding the demolition of Building 1106 (FEIS, Volume II, Appendix A, pages A.5-35 to A.5-38).

#### Mitigation for Demolition of Building 1106

- McConnell AFB will provide materials for interpretive use by the Kansas Aviation Museum. The materials may be photos, drawings, and/or historic summaries related to aviation at McConnell AFB. McConnell AFB is willing to provide these materials, which the Museum has expressed interest in displaying. Upon submittal of the full package, and receipt by the Museum, the materials become property of the Museum.
- McConnell AFB will provide cultural resources-related materials to the Wichita State University Libraries (the Library), Special Collections and University Archives, Wichita, Kansas; the SHPO will receive electronic copies of the materials. The source of materials is McConnell AFB Historic Records files and includes, but is not limited to, documents, photos, and/or drawings related to cultural resources at McConnell AFB.
- McConnell AFB will ensure production of a "web page" suitable for internet posting, and a brochure useful for general distribution/accessibility to educate non-technical audiences within and beyond McConnell AFB. These products will focus on McConnell AFB's history in general, and will also incorporate historic buildings and their pertinent immediate and broader settings.

#### Preservation of Buildings 1107 and 1218

- McConnell AFB will ensure all phases of design, construction, and maintenance/operation of the buildings follow applicable provisions of "The Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring and Reconstructing Historic Buildings" ("Standards") (36 CFR Part 68).
- McConnell AFB will provide opportunities for the SHPO to review and comment on key steps of MOB 1-related design for the buildings.
- McConnell AFB will require all parties, including contractors, involved with design, construction, and maintenance/operation of the buildings follow the Standards.

## **RECORD OF DECISION FOR THE KC-46A FORMAL TRAINING UNIT (FTU) AND FIRST MAIN OPERATING BASE (MOB 1) BEDDOWN**

- McConnell AFB will ensure standards are met where an individual or team involved in the buildings' design, construction, and maintenance/operation reasonably would be expected to meet professional standards associated with the Standards, McConnell AFB will ensure such standards are met.

Although the USAF considered and adopted all practicable means to avoid or minimize environmental harm at both installations potential impacts that could occur and cannot be mitigated include (but may not be limited to) the following (FEIS Volume I, page 2-67, §2.10, et seq.):

- Altus will experience an increase in the number of acres and estimated number of residents exposed to noise levels equal to or greater than 65 dB DNL.
- The existing capacity of regional landfills would be reduced due to the solid waste generated.
- Hazardous and nonhazardous waste would be generated as a result of maintenance functions associated with the new aircraft.
- Stormwater runoff and associated erosion may increase due to construction.
- There is potential for an increase in the number of bird/wildlife-aircraft strikes and aircraft mishaps resulting from the increased number of annual operations.

### **Finding of No Practical Alternative:**

Implementation of the MOB 1 mission at McConnell AFB includes a proposed addition to Building 1220 for the storage of mobility bags. Storage of these bags must be in close proximity to the mobility ramp because they are loaded on aircraft during troop deployments. The existing foundation of Building 1220 is located adjacent to a 100-year floodplain on McConnell AFB.

Factors considered when siting the mobility bag storage area included environmental opportunities/constraints (e.g., noise, floodplain, land use compatibility, threatened and endangered species, historic preservation, cultural resources, and airfield surfaces). Facility requirements and utility availability, Anti-Terrorism/Force Protection (AT/FP) criteria, and the functional relationship to other facilities for energy savings potential, parking, size/massing, and aesthetics were also considered. The factors considered regarding the proposed addition to Building 1220 are discussed in FEIS Volume I, page 4-102, §4.4.4.2.

Building 1220, which serves as the existing mobility bag storage, was the only facility considered suitable to partially meet this storage requirement. This facility would require an 8,000-square-foot addition on the south side and within the floodplain to accommodate this need. The USAF considered an alternate location on the west side of Building 1220 in an area outside of the floodplain. However, construction on this side of Building 1220 would impact a main utility trunk line serving the airfield control tower and the entire Kansas Air National Guard (KANG) complex located on the opposite side of the flightline from Building 1220. The trunk line contains approximately 400 pairs of copper cabling and over 200 fiber optic strands. Construction is not possible over the top of the trunk line, and relocating the trunk line would cost over \$1 million; therefore, construction at this location is considered cost prohibitive. The alternatives considered to avoid effects and incompatible development regarding the proposed

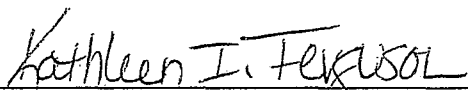
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mobility bag storage area project at Building 1220 are discussed in FEIS Volume I, page 4-102, §4.4.4.2.

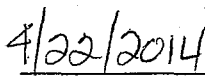
Therefore, pursuant to Executive Order 11988 (Floodplain Management) and considering all supporting information, I find that there is no practicable alternative to the Building 1220 addition being sited in areas within the 100-year floodplain as described above and in the FEIS. The FEIS identifies all practicable measures to minimize harm to the existing environment.

**Decision**

The USAF will, by this decision, beddown up to eight (8) KC-46A Primary Aerospace Vehicles Authorized (PAA) under Air Education and Training Command (AETC) for the FTU and thirty-six (36) PAA under Air Mobility Command (AMC) for the MOB 1. For the FTU, of the two alternative basing locations considered in the FEIS (Altus AFB, OK, and McConnell AFB, KS), the USAF has decided to base the KC-46A with associated construction at Altus AFB to accommodate aircraft anticipated to start arriving in 2016. For the MOB 1, of the four alternative basing locations considered in the FEIS (Altus AFB, OK; Fairchild AFB, WA; Grand Forks AFB, ND; McConnell AFB, KS), the USAF has decided to base the KC-46A with associated construction at McConnell AFB to accommodate aircraft anticipated to start arriving in 2016. The first KC-46A aircraft anticipated to arrive at the MOB 1 base will undergo Initial Operational Test and Evaluation (IOT&E). Existing KC-135 aircraft will be replaced as the new KC-46A aircraft enter the USAF inventory.

  
KATHLEEN I. FERGUSON P.E.

Principal Deputy Assistant Secretary  
Performing Duties as Assistant Secretary of the Air Force  
Installations, Environment and Logistics

  
(Date)